

Appendix E

Information to Support Existing Use Determination

April 5, 2005

Thomas W. Easterly, P.E., DEE, QEP
Commissioner
Indiana Department of Environmental Management
100 N. Senate Ave., IGCN 1301
Indianapolis, IN 46204

Re: Existing Use Determination for CSO-Impacted Portions of Marion County Streams

Dear Commissioner Easterly:

Thank you again for our meeting on February 22 to discuss combined sewer overflow (CSO) issues. I appreciate your willingness to help work through the regulatory and legal issues that many CSO communities face.

Enclosed please find two revised copies of "Information to Support an Existing Use Determination During Selected Storm Events for CSO-Impacted Portions of Marion County Streams." This information provides analysis by the City of Indianapolis of whether there are existing recreational uses in these waterways, as defined in 40 CFR 131.3(e) and IDEM's September 2001 *Combined Sewer Overflow (CSO) Long-Term Control Plan Use Attainability Analysis Guidance*. It replaces information submitted to IDEM on October 28, 2004, and takes into account verbal comments received since then from your staff. We made the following significant changes to the document since the October 2004 version:

- Clarified that the city is requesting the no existing use determination for certain storm events, which will allow us to proceed with a use attainability analysis (UAA)
- Clarified that the determination should apply to both primary and secondary contact recreation
- Explained how the ordinance prohibiting swimming in the CSO areas is enforced
- Added references to Senate Bill 620, which is now being considered by the Indiana General Assembly
- Revised the upstream definition of the White River CSO area to 56th Street instead of Kessler Boulevard to more accurately reflect the first Indianapolis CSO on the river

We believe the data we have collected supports a determination of "no existing use" during the storm events described herein, which would allow us to proceed with a use attainability analysis (UAA) to revise or temporarily suspend recreational water quality standards to reflect unavoidable wet weather impacts of CSOs. We would like IDEM to make a decision on this information as soon as possible. Most importantly, we would like IDEM's approval to move forward with a UAA, which we feel is necessary to finalize our CSO long-term control plan.

We realize this has been a very difficult issue that involves varying opinions and numerous legal and policy considerations. We appreciate your staff's willingness this year to work through the existing use issues in a productive manner.

The City of Indianapolis is determined to move forward to gain regulatory approval of our long-term control plan and to continue implementing projects under that plan. In that spirit, we have completed this analysis based upon your September 2001 guidance, which is expected to be revised in the coming months.

We appreciate your prompt review so we can finalize our long-term control plan and continue improving water quality for our citizens.

Very truly yours,

(signature on file)
James A. Garrard, Director

Enclosure

Cc: Jo-Lynn Traub, Director, Water Division, EPA Region 5 (w/ two enclosures)

**Information to Support a
No Existing Use Determination
During Selected Storm Events for
CSO-Impacted Portions of Marion County Streams**

**Revised Submittal
Prepared by
Indianapolis Clean Stream Team
Indianapolis Department of Public Works
March 25, 2005**

Executive Summary

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The City of Indianapolis is seeking a modification or temporary suspension of water quality standards for *E. coli* bacteria for combined sewer overflows (CSOs) that will occur after implementation of its long-term control plan. This modification would apply only during infrequent, large storm events that exceed the capacity of CSO control facilities and cause untreated overflows to occur.

The City of Indianapolis is revising its April 2001 long-term control plan for reducing combined sewer overflows to Marion County streams. Once completed and approved by the U.S. Environmental Protection Agency (U.S. EPA) and Indiana Department of Environmental Management (IDEM), the plan will dramatically reduce the frequency and duration of combined sewer overflows and significantly reduce the volume of raw sewage flowing into neighborhood streams and the White River.

Although water quality will improve dramatically and overflows will be reduced significantly from the current average of 60 events per year, the city cannot completely eliminate sewer overflows because some storms inevitably will be too large for the facilities that we will build under our long-term control plan.

U.S. EPA and IDEM have recognized that CSO communities may seek to revise or temporarily suspend water quality standards to reflect wet weather impacts of CSOs and to define an attainable goal for CSO-impacted waterways. The City of Indianapolis is one of those communities.

Under federal regulations at 40 CFR 131.3(e), a water body's designated use cannot be removed if it is an "existing use," defined as a "use *actually attained* in the water body on or after November 28, 1975." (Emphasis added.) Before finalizing its long-term control plan and applying for a change to the water quality standards, however, the city must obtain a determination from the state that there are no "existing uses" of these waterways during specific storm events that are likely to cause overflows following full implementation of the LTCP.

The City of Indianapolis has collected data to demonstrate that there is no existing full-body or partial-body contact recreational use, as defined in 40 CFR 131.3(e), within CSO-impacted waterways. This demonstration is based upon the following reasons:

- Recreational activities (such as swimming and wading) are not known to occur during storm events, such as those exceeding a 1.7-month storm.
- CSO-impacted waterways are unsuitable for recreational use during and following large storm events due to high *E. coli* bacteria levels and high stream flows.
- The city has implemented a proactive and effective public outreach program to prevent and control access to waterways during and after wet weather events.

The city's reasoning and data collection are consistent with the principles stated in IDEM's 2001 guidance on CSO long-term control planning and use attainability analyses, as demonstrated in the documents that follow.

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Recreational Use Doesn't Occur During Large Storms

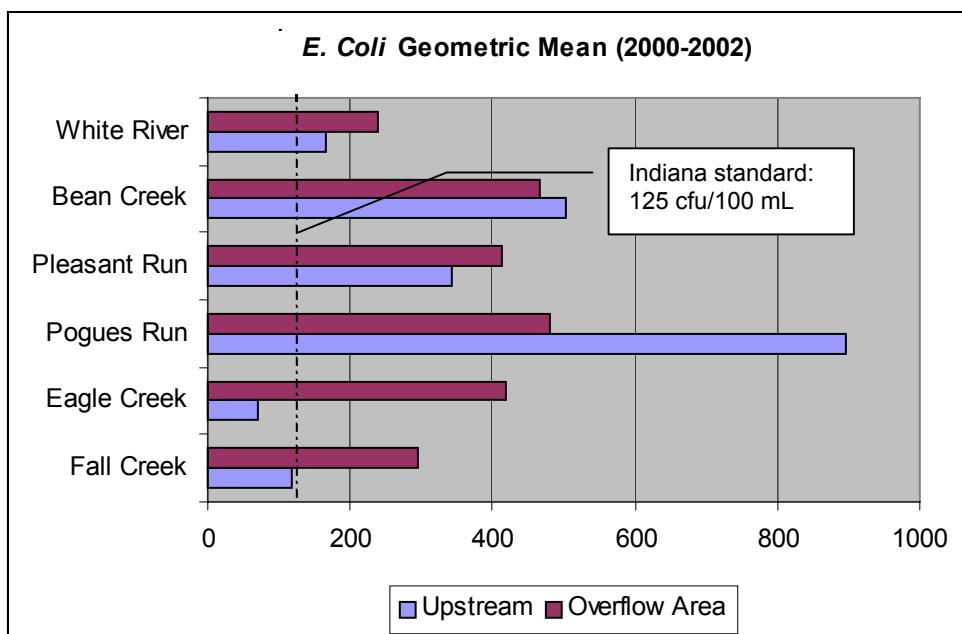
The city used extensive surveys and other public participation methods to gather information on the extent and frequency of water recreation activities in and along CSO-impacted streams. Based upon this information, the city identified a number of locations where recreational uses do occur. According to people who live along and near these streams, the primary use of CSO-impacted waterways is walking, jogging and/or biking along the greenways adjoining the streams. Swimming, wading and other water-contact activities are reported much less frequently, if at all. There are no public or private bathing beaches along any CSO-impacted waterways.

Where recreational activities do occur, survey results demonstrate that people are more likely to recreate in dry weather or after a light rain than a major storm. The evidence collected by the city indicates that recreational use is extremely rare or non-existent during large storm events.

Waters Are Unsuitable for Recreational Use During Large Storms

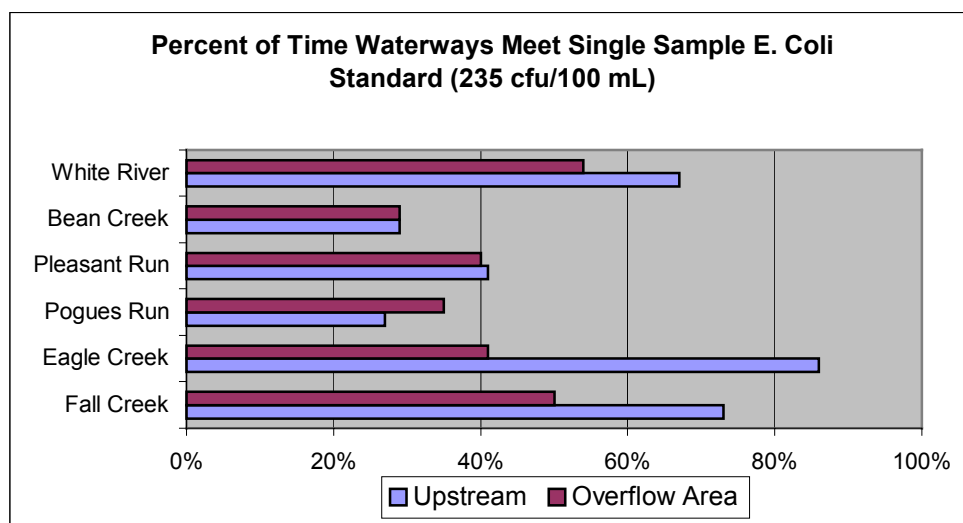
Under current conditions, Marion County waters affected by CSOs do not always meet in-stream *E. coli* bacteria standards established to protect recreational uses. While the city's long-term control plan is expected to significantly reduce bacteria levels during and after storm events, no level of CSO control will attain the recreational standard 100 percent of the time.

The graph below demonstrates that CSO-impacted waterways do not meet Indiana's *E. coli* geometric mean standard for recreational uses, based upon samples collected from 2000-2002 by the Indianapolis Office of Environmental Services and the Marion County Health Department. Only Fall Creek above the CSO area and Eagle Creek above the CSO area meet the standard of 125 cfu/100 mL. Within the CSO area, no stream meets the geometric mean standard established to protect water contact recreation. When the city submits its Use Attainability Analysis, it will demonstrate that while the long-term control plan's implementation is expected to improve the geometric mean, these waterways will still not meet the 125 standard.



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The graph below demonstrates that CSO-impacted waterways do not meet the single sample maximum *E. coli* standard of 235 cfu/100 mL, based upon the same OES/MCHD sampling data collected from 2000-2002. In fact, the data reveal substantial wet weather bacteria impairments upstream of the CSO areas, as well as within CSO areas. A finding of “no existing use” during large storm events on CSO-impacted streams will enable Indianapolis to devote more resources toward addressing non-CSO bacteria sources in these upstream areas. These sources cause impairments much more frequently than the handful of large storms that will cause overflows during and following implementation of a cost-effective long-term control plan. When the city submits its Use Attainability Analysis, it will demonstrate that while the long-term control plan and other water quality improvements are expected to increase the percent of time these waterways meet the single sample *E. coli* standard, these waterways will not meet the standard following CSO events.



Currently, *E. coli* standards are *never* met during the large storm events that will cause untreated overflows following implementation of a cost-effective long-term control plan. Where the city was able to correlate existing in-stream sampling data with large storm events from 2000-2002, the streams consistently were above the *E. coli* single sample maximum standard, as shown in the table below. Based upon a NetStorm simulation of LTCP Systemwide Control Plan 1, the city identified 17 storm events that would have resulted in untreated overflows if the city had installed CSO control facilities to achieve 93 percent capture. The city does not have data to correlate to all 17 storm events, since the OES/MCHD sampling program is designed to collect data on a periodic basis without regard to weather conditions. However, when data was collected that correlated to an estimated overflow event, the single sample maximum standard consistently was not met. Further data supporting these conclusions is provided in documentation for each stream.

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Comparison of Estimated Overflow Events and Historic E. coli Sampling Data, 2000-2002

<i>E. coli</i> bacteria sampling average (cfu/100 mL) within CSO Area							
Estimated Overflow Event Date	Date of Sample	Fall Creek	Eagle Creek	Pogues Run	Pleasant Run	Bean Creek	White River
4/7/2000	4/7/2000	48,200	N/A	1,800	N/A	N/A	N/A
5/26/2000	No samples obtained that correlate to this rain event.						
7/4/2000	7/5/2000	5,200	N/A	6,600	N/A	N/A	10,300
8/17/2000	No samples obtained that correlate to this rain event.						
9/10/2000	9/11/2000	N/A	N/A	N/A	5,300	N/A	N/A
10/4/2000	10/4/2000	N/A	N/A	N/A	N/A	N/A	900
10/4/2000	10/5/2000	N/A	84,000 ²	54,500	N/A	120,000	N/A
6/5/2001	6/5/2001	2,100	N/A	3,700	N/A	N/A	N/A
6/5/2001	6/6/2001	N/A	N/A	N/A	72,300	N/A	N/A
7/1/2001 ¹	7/2/2001	N/A	13,300	N/A	24,500	N/A	N/A
10/10/01	No samples obtained that correlate to this rain event.						
10/24/2001 ¹	No samples obtained that correlate to this rain event.						
4/21/2002 ¹	No samples obtained that correlate to this rain event.						
4/24/2002	No samples obtained that correlate to this rain event.						
4/27/2002	No samples obtained that correlate to this rain event.						
5/7/2002	5/7/2002	2900	N/A	N/A	N/A	N/A	N/A
5/12/2002	5/13/2002	N/A	N/A	N/A	6,000	3,200	N/A
9/20/2002	No samples obtained that correlate to this rain event.						
11/10/2002 ¹	No samples obtained that correlate to this rain event.						

Source: Estimated Overflow Dates: 1950-2003 NetSTORM Simulation for System Wide Plan 1, 93% and 95% Capture Level of Control.

Sampling Data: 2000 - 2002 instream *E. coli* bacteria sampling by OES and MCHD.

Notes:

1. Overflow events that would occur at 93% Capture only.
2. The Eagle Creek value on 10/5/2000 represents a single sample and not an average of several samples.
3. Sampling data is presented only for wet-weather samples taken on or following the estimated overflow event date, and for locations within the CSO area.
4. The 10/4/2000 and 6/5/2001 overflow event dates are shown on two rows because samples were collected on two different days that could be correlated to those events.

The city maintains that these types of storm events would have caused overflow events both before and after November 28, 1975, the date after which an existing use must be protected if it has been “attained.”

In addition, the city has demonstrated in the attached documentation that stream flows are extremely high and unsafe for recreational use during wet weather events exceeding a 1.7-month storm, as shown in the table below. This storm was chosen as an example large storm that might not be controlled by the city’s long-term control plan. Similar conditions in terms of flow, water quality, etc. would result from 2-month, 3-month or larger storms.

Modeled Maximum Stream Flow in CSO-Impacted Areas of Marion County Streams

	3-month storm	1.7-month storm
Fall Creek	500-685 cfs	360-535 cfs
Eagle Creek	620-645 cfs	465-485 cfs
Pogues Run	340-565 cfs	260-440 cfs
Pleasant Run	415-510 cfs	280-395 cfs
White River	595-2550 cfs	440-2000 cfs

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Therefore, the physical and water quality conditions of CSO-impacted waterways make primary and secondary contact recreational activities unsuitable, undesirable, and unsafe during significant wet weather events.

City Programs Prevent and Control Access to Waterways

The city's programs to prevent and control use of CSO-affected waterways include legal barriers to use, warning signs, public notification and education programs, and capital investments in safer water recreation alternatives. These programs are described in more detail in the documentation that follows. Together, they represent an aggressive and proactive outreach/educational program to prevent and control both adults and children from using CSO-impacted waterways during and immediately following a significant wet weather event. In recent comments after a review of the city's program, U.S. EPA's Region V office complimented the city for providing a "good, solid program" that provides multiple pathways for disseminating information to the public and that includes bilingual signs with graphics and warnings about sewage. Since at least 1975, the city's policy, practice and law have worked together to prevent, control and discourage public contact with waters impacted by CSOs. The city has strengthened its efforts in recent years to prevent and control public access to its waterways, and will continue to operate and improve such programs in the future. After LTCP controls are in place, the city is willing to take reasonable steps to prevent access to areas where full-body or partial-body contact may occur shortly after large storms that cause sewage overflows.

Conclusion

Based upon the data collected, the City of Indianapolis concludes that full-body and partial-body contact recreation has not been attained as an existing use under 40 CFR 131.3(e) during storm events exceeding the 1.7-month storm. Therefore, we request that IDEM affirm the city's conclusion and allow the city to proceed with a UAA to evaluate the attainable uses of CSO-impacted streams during the periods and conditions under which we contemplate having residual overflow events.

Introduction

Introduction

The City of Indianapolis is revising its April 2001 Long-Term Control Plan for reducing combined sewer overflows to Marion County streams. Once completed and approved by the U.S. Environmental Protection Agency (U.S. EPA) and Indiana Department of Environmental Management (IDEM), the plan will dramatically reduce the frequency and duration of combined sewer overflows and significantly reduce the volume of raw sewage flowing into neighborhood streams and the White River.

In October 2004, the city sought public input on three systemwide plans. These plan options were: storage/conveyance facilities with central treatment, storage/conveyance with some remote treatment, or total sewer separation. The city's chosen plan of storage/conveyance facilities with central treatment will be combined with sewer separation in isolated areas, improved stormwater management, conversion of neighborhoods on septic systems to sewers, and stream corridor restoration as the city adopts an integrated watershed approach to improving water quality. The plan also will include expansion projects at the Belmont and Southport Advanced Wastewater Treatment Plants to enable the plants to treat more flows during and after wet weather.

A critical question in preparing the long-term control plan is the recommended size of storage tunnels, tanks and on-site treatment facilities. The larger the facilities, the more sewage and stormwater they will capture and the fewer times overflows will occur. However, as size increases, so does the cost. The city, in conjunction with the community, is seeking consensus behind a plan that will best protect public health and the environment in an affordable and cost-effective way. Although water quality will improve dramatically and overflows will be reduced significantly from the current average of 60 events per year, the city cannot completely eliminate sewer overflows because some storms inevitably will be too large for the storage and/or treatment facilities.

Both federal and state legislation, regulations, policy and guidance anticipate the need of many combined sewer overflow (CSO) communities to revise or temporarily suspend water quality standards to reflect wet weather impacts of CSOs.

- U.S. EPA's July 2001 guidance on "Coordinating CSO Long-Term Planning with Water Quality Standards Review" states that EPA's goal "is for CSO communities to develop and implement cost-effective [long-term control plans] that achieve compliance with applicable water quality standards and with other [Clean Water Act] requirements, and *for states to review and revise water quality standards as appropriate to ensure they are attainable.*" (Emphasis added.)
- Senate Enrolled Act 431, enacted by the Indiana General Assembly in 2000, provides that designated uses and associated water quality standards would be temporarily suspended for waters affected by discharges from CSOs if specific conditions are met, including preparation of a Use Attainability Analysis (UAA).
- Senate Bill 620, currently under consideration in the General Assembly, would create a limited recreational use subcategory for CSO-impacted waterways.

Currently, Marion County waters affected by CSOs do not meet *E. coli* bacteria standards established to protect recreational uses at all times. Furthermore, no level of CSO control will attain the recreational standard 100 percent of the time. Some storms would always be too large for the control facilities to capture all flows, unless all sewers were separated. Furthermore, other sources do currently and will continue to prevent Indianapolis streams from meeting the bacteria standards, even during storms in which CSOs are fully captured and treated.

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Sewer separation would reduce the loading of *E. coli* bacteria caused by CSOs. However, the reductions in CSO discharges would be offset by increases in stormwater bacteria discharges. Thus, complete sewer separation will not eliminate bacteria loadings to the streams. Therefore, Indianapolis waterways still would not attain recreational standards during wet weather. Sewer separation would cost an estimated \$6.2 billion, or an additional \$119 per month for the average household – greater than 2 percent of the median household income of the sewer service area. Sewer separation also would result in more frequent urban stormwater discharges of a greater magnitude than streams currently experience.

The City of Indianapolis desires IDEM and EPA approval of an aggressive, cost-effective long-term control plan that will provide a high level of CSO control. However, for the few residual overflows that remain, the city will seek a temporary suspension of water quality standards associated with *E. coli* bacteria or a limited use recreation subcategory, as authorized under state law. To obtain a temporary suspension, subcategory or other modification to the designated use, the city must prepare and gain approval of a Use Attainability Analysis (UAA). The UAA will seek to modify water quality standards for *E. coli* bacteria for overflows that will occur after implementation of the city's long-term control plan.

Under federal regulations, a designated use cannot be removed if it is an existing use, defined as a “use *actually attained* in the water body on or after November 28, 1975.” (Emphasis added.) The State of Indiana is responsible for making the existing use determination.

This submittal provides data and information that would allow IDEM and the Indiana Water Pollution Control Board to make a “no existing use” determination for primary and secondary contact recreation during storm events exceeding the 1.7-month storm. The determination would apply to CSO-impacted portions of affected waterways, based upon the principles stated in IDEM's September 2001 guidance. If a determination of “no existing use” during these storm events is made, Indianapolis will proceed with a Use Attainability Analysis to determine what uses are attainable on CSO-impacted streams during wet weather.

Existing Use Requirements

Federal Requirements: The Clean Water Act sets forth that “wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved.” Federal regulations describe the requirements and procedures for “developing, reviewing, revising, and approving water quality standards” by the states. A state must conduct a Use Attainability Analysis (UAA) whenever the state wishes to remove a designated use that is specified in Section 101(2)(2) of the Clean Water Act. 40 CFR § 131.10(j). A UAA is “a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in Sec. 131.10(g).” 40 CFR 131.3(g). However, a state may remove a designated use from its water quality standards only if the designated use is not an existing use. 40 CFR 131.10(g) and (h)(1).

“Existing uses” are defined as “those uses *actually attained* in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.” 40 CFR 131.3(e). This federal regulation does not specify how to determine whether a use has been “actually attained.”

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State Requirements: During its 2000 session, the Indiana General Assembly approved Senate Enrolled Act 431, which was signed into law by Gov. Frank O'Bannon on March 17, 2000. Section 20(a) of the statute provides that "designated uses and associated water quality criteria are temporarily suspended on a site specific basis, for waters affected by discharges from combined sewer overflow points listed in the National Pollutant Discharge Elimination System (NPDES) permit due to wet weather events," if specific conditions are met, including the federal requirements relating to the UAA process. *See* IC 13-18-3-2.5(a).

IDEM issued its final *Combined Sewer Overflow Long Term Control Plan and Use Attainability Analysis Guidance* (IDEM guidance) on September 19, 2001, which became effective on December 14, 2001. IDEM's guidance identifies the steps that must be followed to apply for, obtain and maintain a temporary suspension of a designated use. In the first step, IDEM must determine if a designated use is an existing use, using information provided by a community through the UAA process. The guidance notes that:

Remembering that an "existing use" cannot be removed, suspended, or otherwise modified, unless modified to make it more protective, it is important that IDEM determines, with input from the community what existing uses may apply to their water bodies. IDEM will determine that a use exists if the use is or has been "actually attained" or the water quality necessary to support the use is in place even if the use, itself, is not currently established, as long as other non-water quality related factors would not prohibit the use. Any decision regarding whether recreational uses are an "existing use" must be a water body-specific determination. (IDEM guidance, p. 1)

The IDEM guidance also recognizes that "a recreational use that has occurred on or after November 29, 1975, may not have occurred 365 days each year. For example, people are unlikely to be engaging in recreational activity in the water during the winter or during severe storm events. Therefore, there may be specific time periods when IDEM will not consider a water body to have an existing recreational use." (IDEM guidance, pp. 50-51.)

IDEM guidance further notes that physical conditions, water hazards and steps taken by a municipality to prevent and control recreational use may affect the existing use determination for a specific waterway. (IDEM guidance, p. 51.)

Factors for Determining a Recreational Use

IDEM guidance establishes that an existing use determination must be made on a case-by-case basis. The guidance indicates that although actual recreational uses may occur, other factors may preclude an existing use determination. Based upon principles set forth in IDEM guidance, an actual recreational use may not be an existing use based upon a review of the following factors:

1. Lack of proximity to residential neighborhoods, parks and schools and/or presence of physical hazards, access, flow or substrate that make such areas unsuitable for recreational use;
2. Waters that are dangerous due to physical hazards such as swift currents, rapids, dams or shipping traffic;
3. Limited extent of actual recreational uses;
4. Limited extent of recreational use during or immediately after a significant wet weather event; or

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5. Unsafe water quality combined with municipal programs to prevent and control access to the water.

Information supporting conditions 1-4 are provided in attached documents for each CSO-impacted watershed in Marion County: Fall Creek, Eagle Creek, Pogues Run, Pleasant Run/Bean Creek and White River. Because some information relating to the fifth condition is not watershed-specific, information describing the city's programs to prevent and control access to the water is provided below.

5. Unsafe water quality combined with municipal programs that prevent and control access to the water.

IDEM guidance notes that water quality unsafe for recreational uses and municipal programs to prevent and control access may be a factor in determining an existing use:

If the water quality is unsafe and access to the water is precluded by (a) existing impediments to physical access such as steep banks, fencing or high retaining walls, then IDEM will not presume an existing recreational use. In order for IDEM to determine that access is precluded by the municipality, the municipality must take steps to actively prevent adults and children from actually using the water. This requires the municipality to prevent and control access to the water and to conduct a reasonable proactive outreach media and educational program to prevent actual use during and immediately following a significant wet weather event. This presumption will not apply to recreational beaches open to the public and other swimming areas designated for public recreation. (IDEM guidance, p. 51.)

Water Quality: See documentation for each watershed.

Municipal Programs to Prevent and Control Access: The city's programs to prevent and control use of CSO-affected waterways include legal barriers to use, warning signs, public notification and education programs, and capital investments in safer water recreation alternatives. These programs are described below:

a) Legal barriers to use. The City of Indianapolis historically has recognized the poor quality of its streams and the associated potential for the transmission of various diseases. In 1975, the city adopted an ordinance that prohibited swimming in most waterways in Marion County, including all streams in the combined sewer area. The ordinance states, "It shall be unlawful for any person to fish, bathe, wash, operate boats in or enter any public waterways, or to send, drive or ride any animal into any public waterways, where not authorized for such purposes." (Code 1975, Sec. 7-21) In addition, as late as 1996, the Health and Hospital Corporation of Marion County passed an ordinance prohibiting full-body and partial-body contact recreation in the CSO area stating that public swimming or wading beaches "shall not be located in areas subject to pollution by sewage." (Gen. Ord. 8-1996(A)) Thus, swimming is prohibited by ordinance in all CSO-impacted waterways in Marion County. These ordinances are provided in Appendix E.

Both the Indianapolis Police Department and Indy Parks law enforcement officers enforce these ordinances by ordering violators out of the waterways, or, in some instances, issuing a citation.

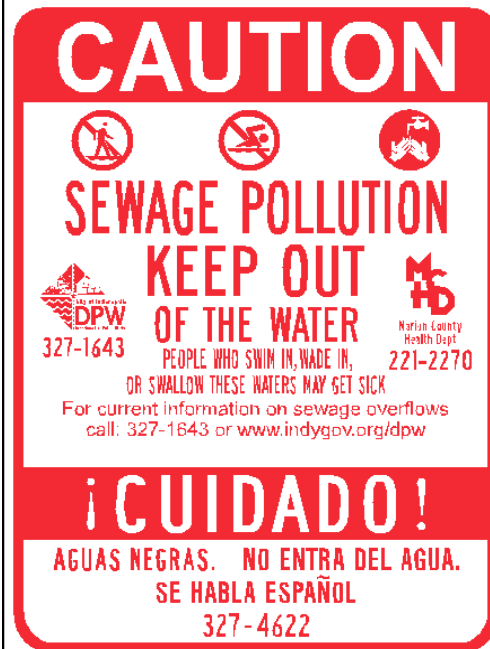
b) Warning signs about sewage pollution. The city and the Marion County Health Department have installed more than 230 warning signs at all CSO outfalls and at public access points to the waterways. The first signs were posted in the 1990s at CSO outfalls and locations where

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recreational activities were known to occur. New signs were posted in 2003 in additional locations. The public access signs warn citizens of sewage pollution and that swimming and wading are not permitted. Signs include both English and Spanish warnings. The city evaluated 180 areas for signs, including schools, bridges, boat docks, boat ramps, canoe launches and other public access areas located on or adjacent to affected waters. Criteria for determining locations of warning signs were ease and ability to access affected waters, ownership of the land, presence of and distance to an existing sign, and ability to inform the greatest number of people. Additional information on the warning signs is included in the city's CSO Public Notification Program Standard Operating Procedures, included as Appendix F.

c) Public notification program. In response to requests from the public, the City of Indianapolis developed a CSO public notification program in 2002. This program was the first of its kind in the state and was implemented prior to the Water Pollution Control Board's passage of a rule requiring such programs in all CSO communities. The overall objective and goal of the city's CSO Public Notification Program is to:

- Notify affected and interested persons when sewage overflows are likely to occur;
- Educate affected and interested persons as to the health hazards and impacts associated with sewage in our waterways;
- Enable affected and interested persons to take the appropriate steps to protect themselves from hazards associated with sewage in waterways; and
- Comply with 327 IAC 5-2.1 (Combined Sewer Overflow Public Notification Rule).



The city's Wet Weather Technical Advisory Committee (WWTAC) was involved in developing the public notification plan. The WWTAC was encouraged to take information about the program back to their respective organizations, which include industry, the Marion County Health Department, Improving Kid's Environment, the Audubon Society, Sierra Club, and Friends of the White River.

The program includes daily monitoring of weather reports, e-mail notification, a telephone hotline, a warning on government access television station and reports to IDEM on monthly Discharge Monitoring Reports. Interested parties can sign up for the e-mail listserve via the city's Web site at <http://www.indygov.org/dpw>. Further, the telephone hotline can be called 24 hours a day to obtain current information on current or impending sewage overflows. The hotline number (327-1643) is included on the signs posted at parks and other public access points.

The city notified citizens of the CSO public notification program through public meetings, the city's Web site, letters to more than 500 neighborhood associations and community groups, and a water bill insert that reached roughly 242,000 households. The city took notification efforts one step further by sending letters to schools, downstream communities and appropriate government organizations. In all, the city mailed program information to approximately 670 schools, day care

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centers and day ministries; six downstream health departments; seven county parks departments and/or government offices; three DNR district headquarters; and one downstream state park.

d) Additional public education programs. In addition to prohibiting stream use through its ordinance, the city discourages the public from recreating in urban waters through extensive public education programs. Since the late 1990s, public outreach has been conducted in the following phases:

Phase I: Formation of the Wet Weather Technical Advisory Committee (1996). This committee is composed of technical experts and community activists with an interest in water quality and wet weather issues. It has provided continuing involvement of key stakeholders and professionals in the city's analysis of stream conditions and control alternatives. The committee also advised the city in the development of its first public education program on water quality issues, known as WaterWise.

Phase II: Formation of Mayor's Raw Sewage Overflow Advisory Committee and public education/input sessions (2000). The mayor's committee is composed of a broad cross-section of the community, including business leaders, environmental activists, neighborhood representatives, and representatives of legal, financial, engineering, construction, labor and other professions. It guided the city as it conducted an extensive series of public education meetings in 2000, followed by public input sessions throughout the community. The committee analyzed the input received and provided recommendations to the mayor on how to proceed in developing the long-term control plan. The public meetings were televised on the local government cable channel and covered in the local news media.

Phase III: Publication of draft long-term control plan and 30-day public comment period and public hearing (2001). The city's draft plan was distributed widely in the community and comments were accepted in writing, via the city's Web site or telephone hotline, and at a public hearing. These activities were covered by the local news media.

Phase IV: Stream use survey and neighborhood outreach meetings to identify ways in which residents use CSO-impacted waterways in Marion County (2002). The city conducted non-random intercept surveys followed by neighborhood meetings to collect information from stream users, neighborhood leaders and environmental and recreational groups. These meetings also provided an opportunity to educate the public about sewage pollution.

Phase V: Creation of the Indianapolis Clean Stream Team public outreach and education program (2003). This comprehensive outreach program is designed to build public support and understanding of CSO and other water quality issues. The program utilizes a variety of methods and materials to inform citizens about progress toward addressing raw sewage overflows. Activities have included display booths at Earth Day and other community events, an 8-minute educational video aired on Channel 16 and distributed to area schools, program and project fact sheets, PowerPoint presentations for neighborhood meetings, and media events to showcase CSO early action projects.

The Clean Stream Team also publishes the Stream Line newsletter quarterly to inform citizens about progress toward addressing combined sewer overflow issues and other

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issues relating to water quality and sewer infrastructure. It is distributed via mail and electronically to nearly 1,500 persons.

In 2003, the Clean Stream Team launched the Team WET (Water Education for Teachers) Schools urban water education curriculum in three middle schools in the Indianapolis Public Schools system. The program works with teachers to incorporate urban water education into science, social studies, history and other subjects. The activities promote learning about a range of water issues, from ecology and pollution prevention to wastewater treatment and water stewardship. The Team WET schools are: McFarland Middle School between Pleasant Run and Bean Creek; Harshman Middle School next to Pogues Run; and John Marshall Middle School, located at the northern edge of the Grassy Creek watershed, which drains into Buck Creek. Just north of Grassy Creek is Indian Creek watershed, which drains into Fall Creek.

Web Page: The City of Indianapolis maintains an award-winning Web site at www.indygov.org that is used to convey extensive information relating to the wastewater collection system. Web pages relevant to CSO-related activities include:

- DPW WebPages (www.indygov.org/dpw)
- Indianapolis Clean Stream Team (www.indycleanstreams.org)
- WaterWise (www.indygov.org/dpw/waterwise)

e) Capital investments in safer water recreation alternatives. IDEM's guidance states that municipal programs to prevent and control access do not remove an existing use presumption from recreational beaches open to the public and other swimming areas designated for public recreation. The city does not have any recreational beaches open to the public or other swimming areas along any of the CSO-impacted waterways. To the city's knowledge, there are no public facilities such as designated bathing beaches, lifeguards, or bath houses within or downstream of the combined sewer area along any CSO-impacted streams, including CSO-impacted portions of White River downstream of Marion County. The geographic extent of the CSO-impacted area for each stream is documented later in this document.

Furthermore, the city's parks department has 22 facilities with swimming pools that provide a safer and more popular form of water recreation for the citizens of Indianapolis. These pools have approximately 285,000 users each year. In addition, the city has constructed eight spray pools that provide free water recreation in a number of parks, with three more in planning or design.

The table on the following page details Indy Parks with swimming pools or spray areas near the CSO-impacted areas of each watershed. The location of each facility is also shown on the recreational use survey maps in Appendix C for each watershed.

Introduction

Indy Parks Swimming Pools and Spray Areas near CSO-Impacted Waterways

Park	Watershed	Year Built	Year Renovated	Average Annual Attendance
Krannert Indoor Pool	Eagle Creek	1959		5,000 to 6,000
Krannert Park Pools and Spray Area	Eagle Creek	1968	1991 & 2003	
Thatcher Park Pool	Eagle Creek	1972		8,000 to 10,000
Centennial & Groff Park Spray Area	Eagle Creek/White River	1955	1995	2,000 to 3,000
Haughville Park Spray Area	Eagle Creek/White River	1955	1992	3,000 to 4,000
LaShonna Bates Aquatics Center	Eagle Creek/White River	1998		10,000 to 14,000
Rhodus Park Pool	Eagle Creek/White River	1972	1992	7,000 to 9,000
Arsenal Park Spray Area	Fall Creek	1998		3,000 to 4,000
Douglass Park Pool	Fall Creek	1972		4,000 to 6,000
Martin Luther King Park Pool	Fall Creek	1972	1995	3,500 to 5,000
Bethel Park Pool and Spray Area	Pleasant Run		1996	5,000 to 6,000
Christian Park Spray Area	Pleasant Run	early to mid 1980's	n/a	more than 852
Ellenberger Park Pool	Pleasant Run	1930	1974	24,000 to 27,000
Garfield Aquatic Center	Pleasant Run	1996		25,000 to 28,000
Brookside Park Pool and Spray Area	Pogues Run		1993	10,000 to 12,000
Willard Park Pool and Spray Area	Pogues Run/Pleasant Run	1982	2003 & 2004	6,000 to 7,000
Broad Ripple Park Pool	White River	1983		13,000 to 16,000
Broadway & 61st Park Spray Area	White River	1955	1995	4,000 to 5,000
Municipal Gardens Spray Area	White River	1998		
Riverside Park Pool and Spray Area	White River	1992		7,000 to 9,000
Andrew Ramsey Park Spray Area	White River/Fall Creek	2002		3,000 to 4,000

Since at least 1975, the city's policy, practice and law have worked together to prevent, control and discourage public contact with waters impacted by CSOs. The city has strengthened its efforts in recent years to prevent and control public access to its waterways, and will continue to operate and improve such programs in the future. After LTCP controls are in place, the city is willing to take reasonable steps to prevent or discourage access to areas where water recreation may occur shortly after large storms that cause sewage overflows.

Introduction

In the following sections, the city provides documentation for each CSO-impacted stream reach relative to the other four existing use principles noted in IDEM guidance:

1. Lack of proximity to residential neighborhoods, parks and schools and/or presence of physical hazards, access, flow or substrate that make such areas unsuitable for recreational use;
2. Waters that are dangerous due to physical hazards such as swift currents, rapids, dams or shipping traffic;
3. Limited extent of actual recreational uses;
4. Limited extent of recreational use during or immediately after a significant wet weather event.

This documentation also includes information on water quality conditions to support the fifth factor: unsafe water quality combined with municipal programs to prevent and control access to the water.

Information Supporting Fall Creek Existing Use Determination

Within the CSO area, some citizens occasionally use Indianapolis streams for full- or partial-body contact recreation, based upon surveys conducted by the City of Indianapolis. However, although actual recreational uses may occur on a sporadic basis, other factors preclude an existing use determination. Documentation supporting factors 1-4 on Fall Creek is provided below and in the attachments.

The city is seeking a “no existing use” determination under 40 CFR 131.3(e) for the CSO area of Fall Creek, which extends from Keystone Avenue to the confluence with the White River.

1. Lack of proximity to residential neighborhoods, parks and schools and/or presence of physical hazards, access, flow or substrate that make such areas unsuitable for recreational use

IDEM’s principles for making an existing use determination note that physical access, flow and substrate are factors to consider. (IDEM guidance, p. 51) IDEM also recognizes that waters may be too shallow during dry periods to allow for adult swimming. The City of Indianapolis collected the following information on Fall Creek’s physical access, flow and substrate to support IDEM’s existing use determination:

Physical Access: During a physical stream survey in May-July 2001, the city collected data on the slopes of stream banks and presence of vegetation along CSO-impacted waterways. Maps and tables summarizing the data collected are provided in Appendix A. Although Fall Creek is accessible in some places, dense vegetation or steep slopes discourage use in other areas:

- Dense vegetation (dense brush) covers approximately 87 percent of the stream banks from Keystone Avenue to the confluence with White River. The rest of the area has five percent medium vegetation (some brush) and eight percent light vegetation (grass).
- Steep slopes (greater than 1:1 ratio) discourage use for about 48 percent of the Fall Creek stream bank; moderate slopes (approximately 1:1) affect about 43 percent of the stream bank in the CSO area.

Heavy vegetation borders the channel throughout much of Fall Creek between the Keystone Dam and 34th Street. Land use from Keystone to 38th Street is light industrial and from 38th to 34th street is mixed residential and light industry. Heavy vegetation and steep slopes along much of the stream limit access in this reach.

From 34th Street to Boulevard Dam, Fall Creek flows through older residential neighborhoods. Large trees typically border the channel in this area. Steep flood control levees restrict access throughout much of this reach. There are, however, a number of potential access points along the Fall Creek Greenway, which parallels the north bank of Fall Creek in this area.

Land use in this area is mixed parkland, residential, and light industry. Stream access is mixed in this reach. The stream can be accessed by the public in Watkins Park and at Fall Creek & 16th Street Park and along much of the Fall Creek Greenway. However, steep levee slopes, heavy vegetation, and unstable banks in these locations tend to make that access difficult.

Stream Flow and Depth: Streamflow in Fall Creek is highly variable and is related to precipitation. Flow in Fall Creek is generally highest in the late winter and early spring and, occasionally, during the summer during intense rainfall. Both high and low streamflows can

Fall Creek

significantly affect the quality of the water. During wet weather, Fall Creek streamflows are predominantly made up of CSO flows downstream of the Keystone Dam. During the summer and fall, most of the water above the Keystone Dam is diverted into the Indianapolis Water treatment plant, allowing little water to pass over the dam. To demonstrate the variability in flow, a hydrograph of U.S. Geological Survey gauge data is provided in Appendix B. Stream flow during wet weather is described in more detail under Factor 2 below.

Stream depth varies in the CSO-impacted portions of Fall Creek, ranging from 1-3 feet during dry weather. A number of exposed sandbars and islands have formed from sediments deposited due to reduced flow downstream of the Indianapolis Water drinking water intake at Keystone Dam.

Substrate: The substrate in Fall Creek is sand and rocks. However, organic sludge lies in many areas and would discourage wading. CSO control is expected to improve the substrate by reducing the primary source of organic sludge deposits.

Summary: Although Fall Creek is accessible to the public in some areas, its dense vegetation, steep-to-medium slopes, and low stream flow make the waterway very poor for full-body or partial-body contact recreational activities. Dense vegetation covers the stream banks and discourages public access along 87 percent of the CSO-impacted area. Steep to moderate stream bank slopes discourage access along approximately 91 percent of the area. Throughout the CSO area, much of Fall Creek is too shallow to support swimming by adults or children during dry weather, when people are most likely to seek out water recreation. Much of the area has a depth between 1 and 3 feet during the recreational season.

2. Waters that are dangerous due to physical hazards such as swift currents, rapids, dams or shipping traffic



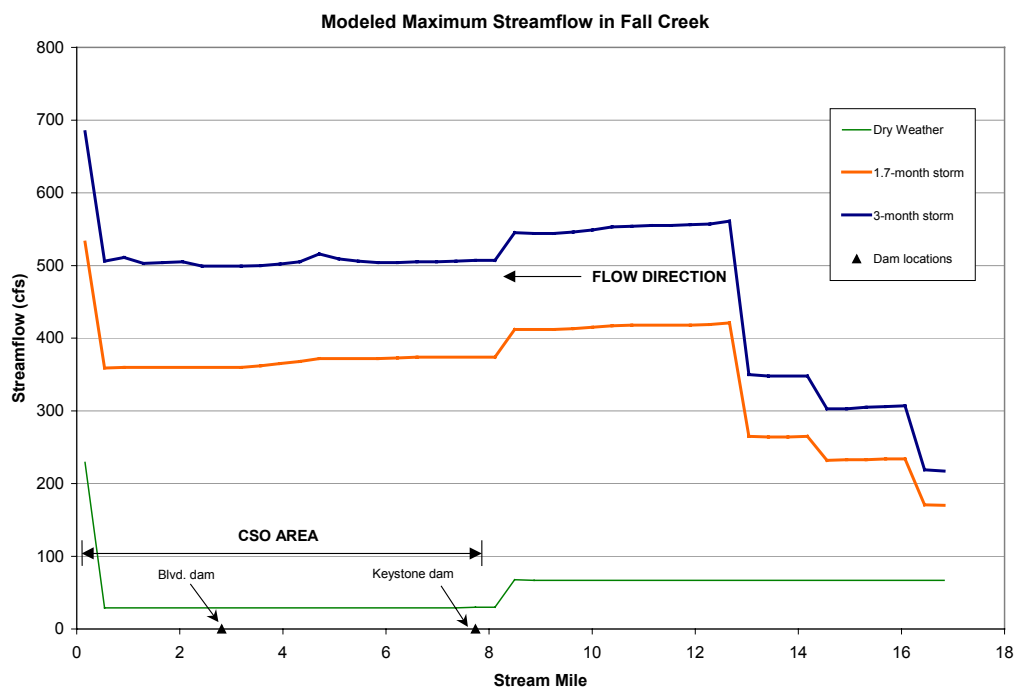
The U.S. Geological Survey maintains a gauging station on Fall Creek at Millersville (i.e., Emerson Way bridge, 9.2 river-miles upstream of its mouth). This gauging station is upstream of the Keystone Avenue dam, where Indianapolis Water makes water supply withdrawals. Wet weather events can transform the low flow nature of the stream into a dangerous waterway, as shown in the photographs below. The first photograph shows Boulevard Dam during summertime dry weather. Note that the walls of the dam are visible on both sides of the creek in the photograph.

Fall Creek

The photograph below shows the same location following the September 1, 2003, 100-year rainfall event. Note that the dam is submerged, but turbulence can be seen in the location of the dam. Stream flows are too dangerous for recreational activities.



For purposes of the existing use determination, the city reviewed storm events greater than a 1.7-month storm (1.25 inches of rainfall over a 24-hour period). This storm was chosen as an example large storm that might not be controlled by the city's long-term control plan. Similar conditions in terms of flow, water quality, etc. would result from 2-month, 3-month or larger storms. As shown in the hydrograph below, estimated maximum stream flows due to a 1.7-month storm range from 360-535 cfs in the CSO area of Fall Creek. During these infrequent storms, Fall Creek is not safe for recreation. In comparison, estimated maximum stream flows due to a 3-month storm range from 500 cfs to 685 cfs.



Fall Creek

One gauge of safety for water contact recreation is the safety of wading, since streams that are not safe for wading would also not be safe for swimming or other water contact activities. Each wader should know and strictly adhere to their personal wading abilities and limitations. When stream flows are low, trained USGS employees measure stream discharge by wading into the stream. When stream flows are high or potentially dangerous, USGS hydrologists make discharge measurements using acoustic Doppler current meters deployed from a tethered boat. At the Millersville gauge, the USGS staff generally did not wade in flows above 340 cfs. Although USGS hydrologists occasionally waded at higher flows, they are equipped with a personal flotation device and have extensive wading safety training and experience. It would not be safe for an inexperienced person to wade the stream at such high flows. During rain events ranging from 1.7 months to 3 months, estimated stream flows range from 360 to 685 cfs and are too dangerous for wading. Although wading is reported in some locations along Fall Creek, it is not known to occur during stream flows occurring from a 1.7-month storm or greater.

Summary: Large storms create stream flows and velocities that are dangerous in Fall Creek, precluding use of the stream for water contact activities such as wading or swimming. These currents will continue to render Fall Creek unsafe for recreational activities during combined sewer overflow events. This data supports a finding of “no existing use” during storm events exceeding the 1.7-month storm on Fall Creek for primary and secondary recreation.

3. Limited extent of actual recreational uses

IDEM’s principles for making an existing use determination establish that “the occasional or incidental use by individual adults does not automatically establish an existing use for recreation.” (IDEM guidance, p. 51). Therefore, the limited extent and frequency of actual uses of waterways should be a factor when determining whether a recreational use is an existing use. There are no community-sanctioned or privately owned recreational areas for swimming, kayaking or other recreational uses on the CSO-impacted portions of Fall Creek. However, some limited and isolated recreational uses do occur. To establish the extent of actual recreational uses, the city conducted public meetings and a non-random face-to-face survey to collect data on how people use or have seen others use CSO-impacted waterways. Sources of information used by the city included:

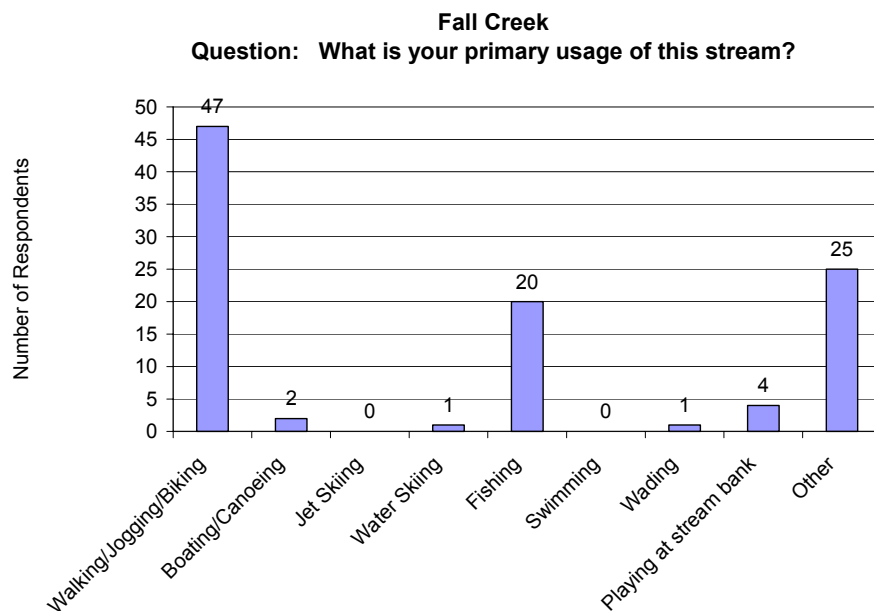
- Physical stream survey in May-July 2001
- Public non-random intercept survey in June 2002 (Fall Creek Use Survey)
- Public outreach meetings with neighborhood associations, environmental activists and recreational groups in September-November 2002
- Marion County Health Department reports of stream use from 2001-2002
- Indy Parks stream use survey in October 2002

Location of Uses: Isolated recreational uses on Fall Creek in the CSO area are found predominantly along the many parks and greenways located along this low-flow, neighborhood stream. However, these recreational uses are precluded during large storm events. Based upon the above data sources, the city identified 18 reported fishing locations, 12 reported playing-at-stream-bank locations, three reported wading locations, and zero reported swimming locations on Fall Creek. Wading and playing by the stream bank are reported at various spots along the greenways, including Fall Creek Greenway, adjacent to Watkins Park, and 30th Street. A map illustrating the observed and reported uses is located in Appendix C.

Fall Creek

Extent of Uses: While recreational activities do occur on Fall Creek within the CSO area, the number of people engaging in water contact activities and the frequency of those activities is limited. In the Fall Creek Use Survey, the primary recreational activity reported by adults surveyed along Fall Creek was walking/jogging/biking (47 of 100 people surveyed). Approximately 25 percent of respondents reported a primary use of fishing, wading or playing at stream bank, as shown in the figure below. For purposes of the survey, the following definitions were used:

- **Swimming:** Full-body contact¹ with the water, including a high potential for swallowing the water (water should be deep enough to permit actual swimming).
- **Wading:** Partial-body contact² with the water (usually water contact to lower legs and possibly hands and arms).
- **Playing at the Stream Bank:** Kneeling, squatting or sitting at stream bank (some water contact may occur when hands reach into the water to touch or pick up something).
- **Fishing:** Fishing at the stream bank or from a boat (water contact occurs through handling fish and tackle).



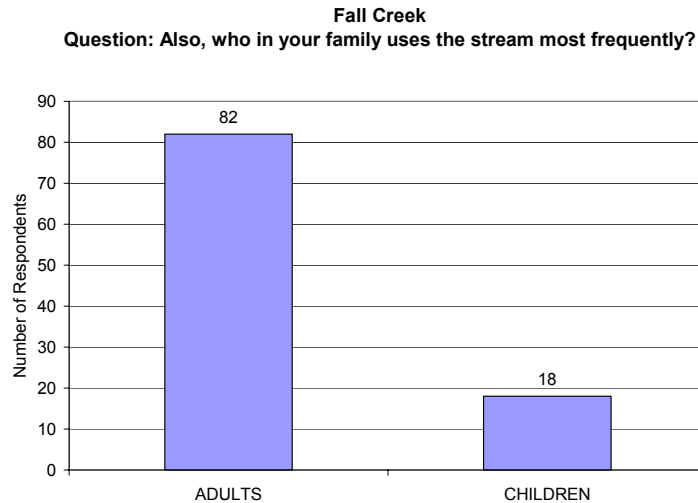
Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Note in the figure above that one person said his or her primary usage of Fall Creek is water skiing. Water skiing is not possible on Fall Creek because it is not a navigable stream.

¹ This is also known as primary contact recreation.

² This is also known as secondary contact recreation.

Fall Creek



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Also according to those surveyed, adults are more likely than children to use Fall Creek for recreational activities.

The full results of the Fall Creek Use Survey are located in Appendix D. Note that the survey results cannot be extrapolated to the city's general population. The survey was designed to identify and survey adults most likely to use the waterways and was not conducted using random sampling. Nor is the sample size large enough to warrant extrapolation of the results to the general population.

Frequency of Use: In a typical year, 39 percent of the respondents reported participating in recreational activities along Fall Creek every week and 31 percent reported less than once a month. This data includes all recreational activities, including those not involving water contact.

Summary: The city used a variety of data sources and public participation methods to gather information on the extent and frequency of water recreation activities in and along Fall Creek. Based upon this information, the city identified a number of locations where recreational uses occur along Fall Creek. The primary use of this waterway for 47 percent of respondents is walking, jogging and/or biking along the greenways adjoining the stream. Swimming was not reported. Wading and other water-contact activities are reported much less frequently. There are no public or private bathing beaches along Fall Creek.

4. Limited extent of recreational use during or immediately after a significant wet weather event.

Little evidence exists of full-body or partial-body contact recreational uses of CSO-impacted portions of Fall Creek, especially after significant wet weather events. Where there is evidence of use, it is very infrequent. Most respondents to the Fall Creek Use Survey indicated that recreational usage within 24 hours after a rainfall is observed infrequently or not at all. Fifty-one percent said that, based on their experience, they have seen adults or children playing in the stream when the current is slow, compared to 9 percent who have seen children or adults playing in the stream when the current is fast. Eighty percent of the interviewees also reported that use is infrequent (only once or twice a month) within 24 hours after a rainfall. However, 33 percent of respondents reported observing children or adults playing in the stream during or within 24 hours

Fall Creek

after a rainfall. The survey did not characterize the size of the rainfall events after which recreation was observed. Based on the answer to the question about fast or slow currents, people are more likely to recreate in dry weather or after a light rain than a major storm. The evidence collected by the city indicates that recreational use is rare or non-existent during and after large storm events.

5. Unsafe water quality combined with municipal programs that prevent and control access to the water.

IDEM guidance notes that water quality that is unsafe for recreational use and municipal programs to prevent and control access may be a factor in determining an existing use:

If the water quality is unsafe and access to the water is precluded by (a) existing impediments to physical access such as steep banks, fencing or high retaining walls, then IDEM will not presume an existing recreational use. In order for IDEM to determine that access is precluded by the municipality, the municipality must take steps to actively prevent adults and children from actually using the water. This requires the municipality to prevent and control access to the water and to conduct a reasonable proactive outreach media and educational program to prevent actual use during and immediately following a significant wet weather event. This presumption will not apply to recreational beaches open to the public and other swimming areas designated for public recreation. (IDEM guidance, p. 51.)

Information on the city's programs to prevent and control access to CSO-impacted waterways is presented in the introduction section to this submittal. Information documenting unsafe water quality on Fall Creek is presented below.

Water Quality: To demonstrate there is no existing recreational use under this factor, the city should demonstrate that recreational water quality standards are not achieved within the CSO-impacted area of Fall Creek during storm events. The table below provides a summary of in-stream water quality data collected in the CSO area of Fall Creek from 2000 – 2002 by the Indianapolis Office of Environmental Services and the Marion County Health Department. Results are shown for all data, dry weather data only and wet weather data. The data show that during wet weather, the geometric mean within the CSO area in Fall Creek was 552 *E. coli* colonies/100 mL, exceeding the state's recreational use standard of 125 cfu/100 mL. More than 65 percent of samples taken in wet weather periods exceed the single sample standard of 235 cfu/100 mL.

Fall Creek *E. coli* Bacteria Compliance (CSO Area)

Data Source	Geometric Mean of 2000-2002 data¹	% of Samples > 235 cfu/100 mL	Total Number of Samples
All Data	295	50.1%	902
Dry Weather Data	146	33.2%	425
Wet Weather Data	552	65.2%	477

⁽¹⁾ Indiana's standard for geometric mean is 125 cfu/100 mL.

Fall Creek

To determine whether water quality standards are being met in the CSO area of Fall Creek during or after large storm events, the city further analyzed in-stream water quality data collected in 2000-2002. Based upon a NetStorm simulation of LTCP Systemwide Control Plan 1, the city identified 17 storm events that would have resulted in untreated overflows if the city had installed CSO control facilities that achieve 93 percent capture. The city does not have data to correlate to all 17 storm events, since the city's existing sampling program is designed to collect data on a periodic basis without regard to weather conditions. However, on the days when existing 2000-2002 data could be correlated to an estimated overflow event, the data consistently show that the single sample maximum standard of 235 *E. coli* colonies/100 mL is not being met. This demonstrates that the CSO area of Fall Creek is unsafe for recreational use during and after those storm events. These types of storm events would have caused overflow events both before and after November 28, 1975, the date after which an existing use must be protected if it has been "attained."

FALL CREEK COMPARISON OF ESTIMATED OVERFLOW EVENTS AND HISTORICAL E. COLI BACTERIA SAMPLING 2000-2002								
Estimated Overflow Event Date (93% Capture)	Date of Sample	16th St OES (cfu/100 mL)	30th St (cfu/100 mL)	Central (cfu/100 mL)	Capitol (cfu/100 mL)	MLK (cfu/100 mL)	Stadium (cfu/100 mL)	Average (cfu/100 mL)
4/7/00	4/7/00	N/A	55,000	72,000	74,000	21,000	19,000	48,200
5/26/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/4/00	7/5/00	N/A	5,900	6,300	5,500	3,300	4,800	5,200
8/17/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/10/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/4/00	10/5/00	200,000	N/A	N/A	N/A	N/A	N/A	N/A
4/10/01	4/10/01	N/A	410	200	100	100	100	200
6/5/01	6/5/01	N/A	1,340	1,340	1,560	3,280	2,780	2,100
7/1/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/10/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/24/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/24/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/7/02	5/7/02	2,400	4,400	2,650	2,650	1,850	3,400	2,900
5/12/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/20/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/10/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Estimated Overflow Dates: 1950-2003 NetSTORM Simulation for System Wide Plan 1, 93% Capture Level of Control.

Sampling Data: 2000 - 2002 instream *E. coli* bacteria sampling by OES and MCHD.

Note: Sampling data is presented only for dates on or following the estimated overflow event date, and for locations within the CSO area.

Recreational users also may be discouraged during storm events due to high flows, murky water as it moves sediments downstream, and unattractive odors from the stream. Water quality is clearly unsafe for recreational use, particularly during these large wet weather events.

Summary

Although occasional recreational uses occur along the CSO-impacted areas of Fall Creek, these should not be considered existing uses under 40 CFR 131.3(e) based upon the following factors:

1. Physical access and flow that are unsuitable for recreational use during large storm events, such as those exceeding a 1.7-month storm;
2. Waters that are dangerous during large storm events due to swift currents and rapids
3. Limited extent and frequency of actual recreational uses
4. Minimal recreational use during or immediately after significant wet weather events;
5. Unsafe water quality combined with extensive municipal programs to prevent and control access to the water following wet weather events.

Fall Creek

Furthermore, the physical and water quality conditions of Fall Creek downstream of Keystone Avenue make primary and secondary contact recreational activities unsuitable, undesirable, and unsafe during significant wet weather events. Based upon this data, we conclude that full-body and partial-body contact recreation is not an existing use of Fall Creek downstream of Keystone Avenue during storm events exceeding the 1.7-month storm. Therefore, we request that IDEM affirm the city's conclusion and allow the city to proceed with a UAA to evaluate the attainable uses of the CSO area of Fall Creek during the periods and conditions under which we contemplate having residual overflows.

Appendices:

- A. Physical Stream Survey Maps and Tables
- B. USGS flow graph
- C. Fall Creek Recreational Use Map
- D. 2002 Fall Creek Use Survey

Reference:

U.S. Geological Survey, 1996. Low-Flow Characteristics of Indiana Streams. USGS Water Resources Investigation Report 96-4128. Page 128.

Information Supporting Eagle Creek Existing Use Determination

Within the CSO area, some citizens occasionally use Indianapolis streams for full- or partial-body contact recreation, based upon surveys conducted by the City of Indianapolis. However, although actual recreational uses may occur on a sporadic basis, other factors preclude an existing use determination. Documentation supporting factors 1-4 on Eagle Creek is provided below and in the attachments.

The city is seeking a “no existing use” determination during storm events exceeding the 1.7-month storm for the CSO area of Eagle Creek, which begins at Tibbs Avenue and ends at its confluence with White River. It also includes the portion of Little Eagle Creek from Vermont Street to its confluence with Eagle Creek.

1. Lack of proximity to residential neighborhoods, parks and schools and/or presence of physical hazards, access, flow or substrate that make such areas unsuitable for recreational use

IDEM’s principles for making an existing use determination note that physical access, flow and substrate are factors to consider. (IDEM guidance, p. 51) IDEM also recognizes that waters may be too shallow during dry periods to allow for adult swimming. The City of Indianapolis collected the following information on Eagle Creek’s physical access, flow and substrate to support IDEM’s existing use determination:

Physical Access: During a physical stream survey in May-July 2001, the city collected data on the slopes of stream banks and presence of vegetation along CSO-impacted waterways. Maps and tables summarizing the data collected are provided in Appendix A. Although Eagle Creek is accessible in some places, dense vegetation or steep slopes discourage use in other areas:

- Dense vegetation (dense brush) covers approximately 43 percent of the stream banks from Michigan Street to the confluence with White River. The rest of the area has 14 percent medium vegetation (some brush) and 42 percent light vegetation (grass).
- Steep slopes (greater than 1:1 ratio) discourage use for about 10 percent of the Eagle Creek stream bank; moderate slopes (approximately 1:1) affect about eight percent of the stream bank in the CSO area.
- Portions of Eagle Creek flow through urban and industrial areas.

The section of Little Eagle Creek approximately 0.75 miles upstream of Cossell Road is characterized by dense vegetation along both sides of the channel. Land use in this section is primarily industrial with some small residential areas. Stream access in this reach is limited by dense vegetation.

Between Cossell Road and Kentucky Avenue both Little Eagle Creek and Eagle Creek are bounded by earthen levees. Land use is mixed industry and high density residential. The levees are maintained in mown turfgrass. Some riparian forest is developing near the channel in the lower reaches of this section. Despite the steep levees throughout much of this reach, accessibility is good. There are several areas where vehicles can drive right up to the stream.

From Kentucky Avenue to its confluence with the White River, Eagle Creek is a channelized stream that flows through a heavily industrial area. The channel is bounded by earthen levees throughout this section. The levees are maintained in mown turf. Some riparian forest is

Eagle Creek

developing near the channel in the lower reaches of this section. Accessibility is very limited in this reach by industrial activity along both banks.

Stream Flow and Depth: Stream flow in Eagle Creek is highly variable and is related to precipitation and water releases from the Eagle Creek dam. Flow in Eagle Creek is generally highest in the late winter and early spring and, occasionally, during the summer following intense rainfall. Both high and low stream flows can significantly affect water quality. To demonstrate the variability in flow, a hydrograph of U.S. Geological Survey flow gauge data is provided in Appendix B. Stream flow during wet weather is described in more detail under Factor 2 below.

Stream depth is generally low in the CSO-impacted portions of Eagle Creek, typically less than one foot deep during dry weather, according to the May/June 2001 field survey.

Substrate: The substrate in Eagle Creek is mostly sand and rocks. Although the substrate and shallow depths in Eagle Creek can be suitable for wading, occasional deep pools make wading potentially dangerous, especially to children.

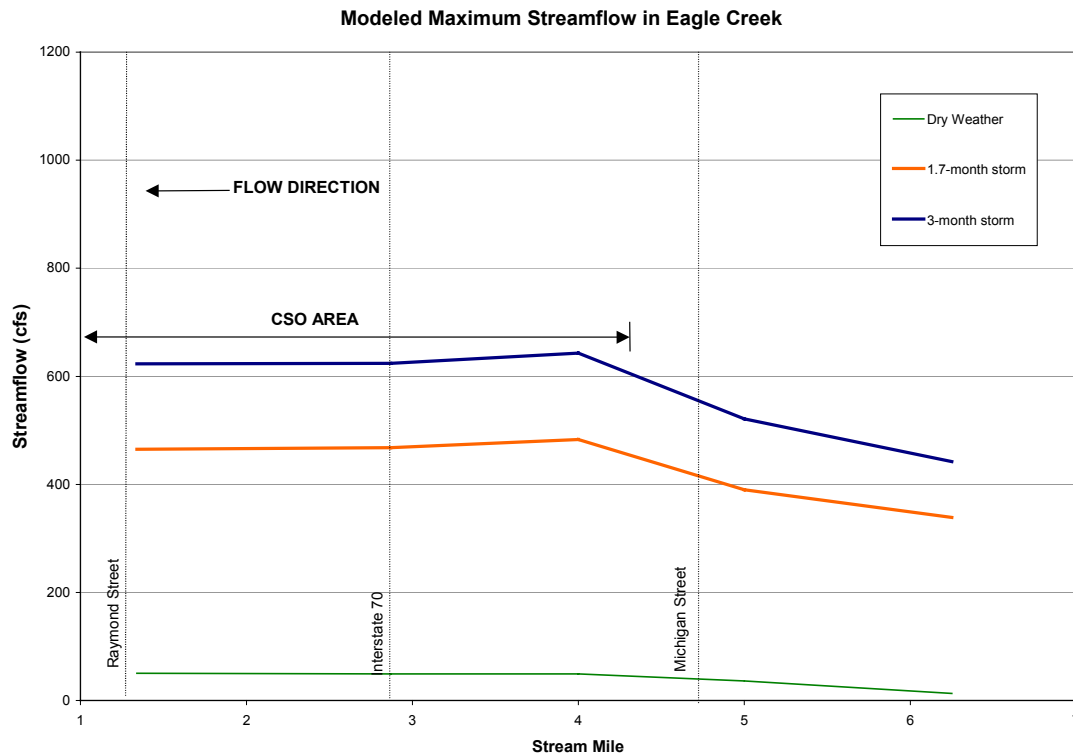
Summary: Although portions of Eagle Creek are inaccessible to the public, much of the stream is accessible due to light vegetation and gradual slopes. The majority of the area has a depth between 6 and 12 inches during the recreational season. In the lower reaches, the high industrial activity on both banks discourages people from accessing the stream at these locations.

2. Waters that are dangerous due to physical hazards such as swift currents, rapids, dams or shipping traffic

The U.S. Geological Survey maintains a gauging station on Eagle Creek on the downstream side of the bridge on Lynhurst Drive (i.e., 7.1 river-miles upstream of its mouth). Wet weather events can transform the low flow nature of the stream into a dangerous and unsafe waterway. The first photograph below shows Eagle Creek at low flow conditions in June 2001 upstream of the railroad bridge near McCarty Avenue. The second photograph shows the same location following a 1.25" rain event in October 2004. The sandy, graveled areas and low stream flows conducive to recreation are covered by fast-flowing and murky water following such a storm event.



Eagle Creek



For purposes of the existing use determination, the city reviewed storm events greater than a 1.7-month storm. This storm was chosen as an example large storm that might not be controlled by the city's long-term control plan. Similar conditions in terms of flow, water quality, etc. would result from 2-month, 3-month or larger storms. As shown in the hydrograph below, estimated maximum stream flows due to a 1.7-month storm range from 465-485 cfs in the CSO area of Eagle Creek. In comparison, estimated maximum stream flows due to a 3-month storm range from 620-645 cfs. During these infrequent storms, Eagle Creek is not safe for recreation.

Eagle Creek

One gauge of safety for water contact recreation is the safety of wading, since streams that are not safe for wading would also not be safe for swimming or other water contact activities. Each wader should know and strictly adhere to their personal wading abilities and limitations.

When stream flows are low, trained USGS employees measure stream discharge by wading into the stream. When stream flows are high or potentially dangerous, USGS hydrologists make discharge measurements using acoustic Doppler current meters deployed from a tethered boat. At the Lynhurst gauge on Eagle Creek, the USGS staff generally did not wade in flows above 140 cfs. Although USGS hydrologists occasionally wade at higher flows, they are equipped with a personal flotation device and have extensive wading safety training and experience. It would not be safe for an inexperienced person to wade the stream at such high flows. During rain events ranging from 1.7 months to 3 months, estimated stream flows range from 465-645 cfs and are too dangerous for wading. Although wading is reported in some locations along Eagle Creek, it is not known to occur during stream flows occurring from a 1.7-month storm or greater.

Summary: Large storms create stream flows and velocities that are dangerous in Eagle Creek, precluding use of the stream for water contact activities such as wading or swimming. These currents will continue to render Eagle Creek unsafe for recreational activities during combined sewer overflow events. This data supports a finding of “no existing use” during storm events exceeding the 1.7-month storm on Eagle Creek.

3. Limited extent of actual recreational uses

IDEM’s principles for making an existing use determination establish that “the occasional or incidental use by individual adults does not automatically establish an existing use for recreation.” (IDEM guidance, p. 51.) Therefore, the limited extent and frequency of actual uses of waterways should be a factor when determining whether a recreational use is an existing use. There are no community-sanctioned or privately owned recreational areas for swimming, kayaking or other recreational uses on the CSO-impacted portions of Eagle Creek. However, some recreational uses do occur.

To establish the extent of actual recreational uses, the city conducted public meetings and a non-random face-to-face survey to collect data on how people use or have seen others use CSO-impacted waterways. Sources of information used by the city included:

- Physical stream survey in May-July 2001
- Public non-random intercept survey in June 2002 (Eagle Creek Use Survey)
- Public outreach meetings with neighborhood associations, environmental activists and recreational groups in September-November 2002
- Marion County Health Department reports of stream use from 2001-2002
- Indy Parks stream use survey in October 2002

Location of Uses: Isolated recreational uses on Eagle Creek in the CSO area are found predominantly in residential areas. Based upon the above data sources, the city identified eight reported fishing locations, five reported playing-at-stream-bank locations, seven reported wading

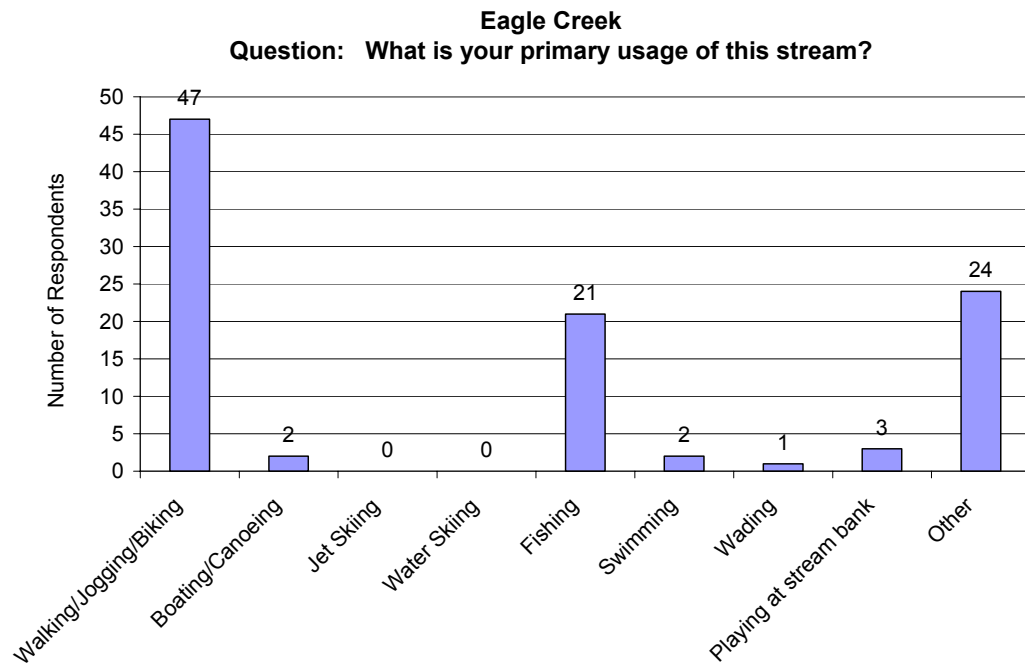
Eagle Creek

locations, and nine reported swimming locations on Eagle Creek. Wading and playing by the stream bank are reported at various spots, including Cossell Road, adjacent to Ridenour Park, and Sadie Street. Fishing also is reported along numerous locations along this stream. Swimming was reported along Eagle Creek at many of the same points as wading was reported. Based upon the information gathered in this survey, the city placed additional warning signs along Eagle Creek to discourage wading and swimming. A map illustrating the observed and reported uses is located in Appendix C.

Extent of Uses: While some recreational activities do occur on Eagle Creek within the CSO area, the number of people engaging in water contact activities and the frequency of those activities is limited. In the Eagle Creek Use Survey, the primary recreational activity reported by people along Eagle Creek was walking/jogging/biking (47 of 100 people surveyed). Twenty-one percent reported a primary use of fishing. Very few reported swimming, wading or playing at stream bank as a primary use, as shown in the graph below. For purposes of the survey, the following definitions were used:

- **Swimming:** Full-body contact with the water, including a high potential for swallowing the water (water should be deep enough to permit actual swimming)
- **Wading:** Partial body contact with the water (usually water contact to lower legs and possibly hands and arms)
- **Playing at the Stream Bank:** Kneeling, squatting or sitting at stream bank (some water contact may occur when hands reach into the water to touch or pick up something)
- **Fishing:** Fishing at the stream bank or from a boat (water contact occurs through handling fish and tackle)

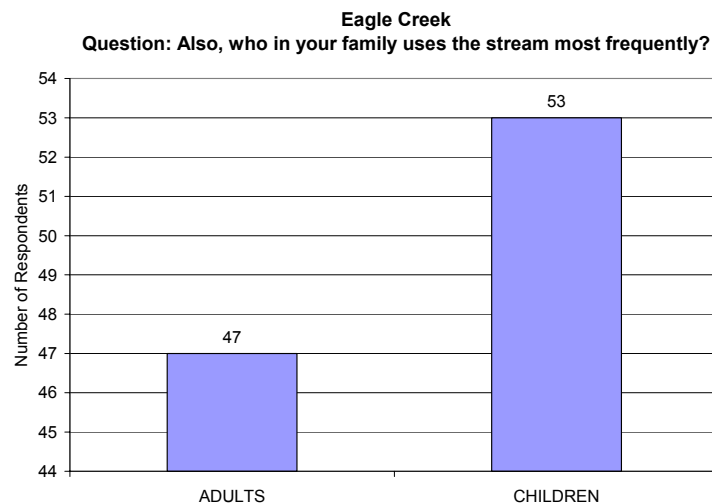
Eagle Creek



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Also according to the survey, children are more likely than adults to use Eagle Creek for recreational activities.

Eagle Creek



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

According to the survey and additional neighborhood meetings to confirm the survey's findings, swimming is observed or practiced much less frequently than activities that do not involve full-body contact. The full results of the Eagle Creek Use Survey are located in Appendix D. Note that the survey results cannot be extrapolated to the city's general population. The survey was designed to identify people most likely to use the waterways and was not conducted using random sampling. Nor is the sample size large enough to warrant extrapolation of the results to the general population.

Frequency of Use: In a typical year, 21 percent of the respondents reported participating in recreational activities along Eagle Creek every week and 23 percent reported less than once a month.

Summary: The city used a variety of data sources and public participation methods to gather information on the extent and frequency of water recreation activities in and along Eagle Creek. Based upon this information, the city identified a number of locations where recreational uses occur along Eagle Creek. The primary use of this waterway for 47 percent of respondents is walking, jogging and/or biking along the greenways adjoining the stream. Swimming, wading and other water-contact activities are reported much less frequently. There are no public or private bathing beaches within the CSO-impacted areas of Eagle Creek.

4. Limited extent of recreational use during or immediately after a significant wet weather event.

Little evidence exists of full-body or partial-body contact recreational uses of CSO-impacted portions of Eagle Creek, especially after significant wet weather events. Where there is evidence of use, it is very infrequent. Most respondents to the Eagle Creek Use Survey indicated that recreational usage within 24 hours after a rainfall is observed infrequently or not at all. Seventy-four percent said that, based on their experience, they have seen adults or children playing in the stream when the current is slow, compared to 23 percent who have seen children or adults playing in the stream when the current is fast. Seventy-seven percent of the interviewees also reported that use is infrequent (only once or twice a month) within 24 hours after a rainfall. However, 39 percent of respondents reported observing children or adults playing in the stream during or

Eagle Creek

within 24 hours after a rainfall. The survey did not characterize the size of the rainfall events after which recreation was observed. Based on the answer to the question about fast or slow currents, people are more likely to recreate in dry weather or after a light rain than a major storm. The evidence collected by the city indicates that recreational use is rare or non-existent during and after large storm events.

5. Unsafe water quality combined with municipal programs that prevent and control access to the water.

IDEM guidance notes that unsafe water quality and municipal programs to prevent and control access may be a factor in determining an existing use:

If the water quality is unsafe and access to the water is precluded by (a) existing impediments to physical access such as steep banks, fencing or high retaining walls, then IDEM will not presume an existing recreational use. In order for IDEM to determine that access is precluded by the municipality, the municipality must take steps to actively prevent adults and children from actually using the water. This requires the municipality to prevent and control access to the water and to conduct a reasonable proactive outreach media and educational program to prevent actual use during and immediately following a significant wet weather event. This presumption will not apply to recreational beaches open to the public and other swimming areas designated for public recreation. (IDEM guidance, p. 51.)

Information on the city's programs to prevent and control access to CSO-impacted waterways is presented in the introduction section to this submittal. Information documenting unsafe water quality on Eagle Creek is presented below.

Water Quality: To demonstrate there is no existing recreational use under this factor, the city should demonstrate that recreational water quality standards are not achieved within the CSO-impacted area of Eagle Creek during storm events.

The table below provides a summary of in-stream water quality data collected in the CSO area of Eagle Creek from 2000 – 2002 by the Indianapolis Office of Environmental Services and the Marion County Health Department. Results are shown for all data, dry weather data only and wet weather data. The data show that during wet weather, the geometric mean within the CSO area in Eagle Creek was 1719 *E. coli* colonies/100 mL, exceeding the state's recreational use standard of 125 cfu/100 mL. More than 80 percent of samples taken in wet weather periods exceed the single sample standard of 235 cfu/100 mL.

Eagle Creek

Eagle Creek *E. coli* Bacteria Compliance (CSO Area)

Data	Geometric Mean 2000-2002 ¹	% of Samples 235 cfu/100	Total of
All	419	58.7	63
Dry Weather	165	44.7	38
Wet Weather	171	80.0	25

⁽¹⁾ Indiana's standard for geometric mean is 125

To determine whether water quality standards are being met in the CSO area of Eagle Creek during or after large storm events, the city further analyzed in-stream water quality data collected in 2000-2002. Based upon a NetStorm simulation of LTCP Systemwide Control Plan 1, the city identified 17 storm events that would have resulted in untreated overflows if the city had installed CSO control facilities that achieve 95 percent capture. The city does not have data to correlate to all 17 storm events, since the city's existing sampling program is designed to collect data on a periodic basis without regard to weather conditions. However, on two dates when existing 2000-2002 data could be correlated to an estimated overflow event, the data show that the single sample maximum standard of 235 *E. coli* colonies/100 mL was not being met. This demonstrates that the CSO area of Eagle Creek is unsafe for recreational use during and after those storm events. These types of storm events would have caused overflow events both before and after November 28, 1975, the date after which an existing use must be protected if it has been "attained."

EAGLE CREEK COMPARISON OF ESTIMATED OVERFLOW EVENTS AND HISTORICAL <i>E. COLI</i> BACTERIA SAMPLING 2000-2002						
Estimated Overflow Event Date (93% Capture)	Date of Sample	Raymond OES (cfu/100 mL)	Vermont (cfu/100 mL)	McCarty (cfu/100 mL)	Minnesota (cfu/100 mL)	Average (cfu/100 mL)
4/7/00	N/A	N/A	N/A	N/A	N/A	N/A
5/26/00	N/A	N/A	N/A	N/A	N/A	N/A
7/4/00	N/A	N/A	N/A	N/A	N/A	N/A
8/17/00	N/A	N/A	N/A	N/A	N/A	N/A
9/10/00	N/A	N/A	N/A	N/A	N/A	N/A
10/4/00	10/5/00	84,000	N/A	N/A	N/A	N/A
4/10/01	N/A	N/A	N/A	N/A	N/A	N/A
6/5/01	N/A	N/A	N/A	N/A	N/A	N/A
7/1/01	7/2/01	N/A	17,250	12,960	9,580	13,300
10/10/01	N/A	N/A	N/A	N/A	N/A	N/A
10/24/01	N/A	N/A	N/A	N/A	N/A	N/A
4/21/02	N/A	N/A	N/A	N/A	N/A	N/A
4/24/02	N/A	N/A	N/A	N/A	N/A	N/A
4/27/02	N/A	N/A	N/A	N/A	N/A	N/A
5/7/02	N/A	N/A	N/A	N/A	N/A	N/A
5/12/02	N/A	N/A	N/A	N/A	N/A	N/A
9/20/02	N/A	N/A	N/A	N/A	N/A	N/A
11/10/02	N/A	N/A	N/A	N/A	N/A	N/A

Source: Estimated Overflow Dates: 1950-2003 NetSTORM Simulation for System Wide Plan 1, 93% Capture Level of Control.

Sampling Data: 2000 - 2002 instream *E. coli* bacteria sampling by OES and MCHD.

Note: Sampling data is presented only for dates on or following the estimated overflow event date, and for locations within the CSO area.

Summary

Although occasional recreational uses occur along the CSO-impacted areas of Eagle Creek, these should not be considered existing uses under 40 CFR 131.3(e) based upon the following factors:

Eagle Creek

1. Physical access and flow that are unsuitable for recreational use during large storm events, such as those exceeding a 1.7-month storm;
2. Waters that are dangerous during large storm events due to swift currents and rapids
3. Limited extent and frequency of actual recreational uses
4. Minimal recreational use during or immediately after significant wet weather events;
5. Unsafe water quality combined with extensive municipal programs to prevent and control access to the water following wet weather events.

Furthermore, the physical and water quality conditions of Eagle Creek downstream of Tibbs Avenue make primary and secondary contact recreational activities unsuitable, undesirable, and unsafe during significant wet weather events. Based upon this data, we conclude that full-body and partial-body contact recreation is not an existing use of Eagle Creek downstream of Tibbs Avenue during storm events exceeding the 1.7-month storm. Therefore, we request that IDEM affirm the city's conclusion and allow the city to proceed with a UAA to evaluate the attainable uses of the CSO area of Eagle Creek during the periods and conditions under which we contemplate having residual overflows.

Appendices:

- A. Physical Stream Survey Maps and Tables
- B. USGS flow graph
- C. Eagle Creek Recreational Use Map
- D. 2002 Eagle Creek Use Survey

Reference:

U.S. Geological Survey, 1996. Low-Flow Characteristics of Indiana Streams. USGS Water Resources Investigation Report 96-4128. Page 134.

Information Supporting Pogues Run Existing Use Determination

Within the CSO area, some citizens occasionally use Indianapolis streams for full- or partial-body contact recreation, based upon surveys conducted by the City of Indianapolis. However, although actual recreational uses may occur on a sporadic basis, other factors preclude an existing use determination. Documentation supporting Factors 1-4 on Pogues Run is provided below and in the attachments.

The city is seeking a “no existing use” determination during storm events exceeding the 1.7-month storm under 40 CFR 131.3(e) for the CSO area of Pogues Run, which extends from Interstate 70 to its confluence with the White River. Note below in Factor 1 that the portion of Pogues Run from New York Street to the confluence with the White River is enclosed in a tunnel that flows under the downtown area and is not accessible for any recreational use.

1. Lack of proximity to residential neighborhoods, parks and schools and/or presence of physical hazards, access, flow or substrate that make such areas unsuitable for recreational use

IDEM’s principles for making an existing use determination note that physical access, flow and substrate are factors to consider. (IDEM guidance, p. 51) IDEM also recognizes that waters may be too shallow during dry periods to allow for adult swimming. The City of Indianapolis collected the following information on Pogues Run’s physical access, flow and substrate to support IDEM’s existing use determination:

Physical Access: During a physical stream survey in May-July 2001, the city collected data on the slopes of stream banks and presence of vegetation along CSO-impacted waterways. Maps and tables summarizing the data collected are provided in Appendix A. Pogues Run has variable accessibility. In some areas dense vegetation or steep slopes discourage use:

- Dense vegetation (dense brush) covers approximately 64 percent of the stream banks from 21st Street to the Pogues Run Tunnel (New York Avenue). The rest of the area has 23 percent medium vegetation (some brush) and 13 percent light vegetation (grass).
- Steep slopes (greater than 1:1 ratio) discourage use for about 32 percent of the Pogues Run stream bank; moderate slopes (approximately 1:1) affect about 35 percent of the stream bank in the CSO area.
- Similar to Pleasant Run, much of the stream flows through city parkland. The remainder flows through high-density residential and light industrial areas.

Pogues Run from 21st Street (Forest Manor Park) to State Avenue (Spades Park) flows through three city parks: Forest Manor, Brookside, and Spades. Dense vegetation and steep slopes can limit stream access throughout most of this reach. However, there are abundant public access points in the parks and along the greenway.

From State Avenue (Spades Park) to New York Street, Pogues Run flows through a mixed residential and urban corridor. Streamside vegetation is typically turfgrass. This section of Pogues Run is generally very accessible.

From New York Street to the confluence with White River, Pogues Run is enclosed in an underground conduit. This section of Pogues Run flows under downtown Indianapolis and is not accessible to the public.

Pogues Run

Stream Flow and Depth: Stream flow in Pogues Run is highly variable and is related to precipitation. Flow in Pogues Run is generally highest in the late winter and early spring and, occasionally, during the summer following intense rainfall. Both high and low stream flows can significantly affect water quality. During wet weather, most of the flow in Pogues Run comes from CSO outfalls. The U. S. Geological Survey does not maintain a gauging station on Pogues Run. However, the Pogues Run and Pleasant Run watersheds and flow characteristics are very similar, so professional knowledge of Pogues Run and USGS data for Pleasant Run were used to determine flow conditions on Pogues Run. Stream flow during wet weather is described in more detail under Factor 2 below.

Baseflow is minimal as a result of a heavily urbanized watershed, which results in very low flow conditions during dry months and high flows in response to runoff. Stream depth varies but is typically less than 1 foot deep during dry weather, according to the 2001 stream survey.

Substrate: In the upper reach, high runoff has created a very rocky substrate in much of this reach by removing most of the finer grained sediments. The scoured rocky substrate in dry weather is not a desirable wading area. In the lower reach, the substrate remains rocky as a result of high runoff flows, but bank instability leads to a buildup of silt during low flow periods. The silt builds up on the rocky substrate, also creating an undesirable and unsafe wading area due to the possibility of slipping or losing your footing.

Summary: Pogues Run has variable accessibility to the public. In some areas its dense vegetation, steep-to-medium slopes, and low stream flow make the waterway undesirable for partial- or full-body contact recreational activities. Dense vegetation covers the streambanks and discourages public access along 64 percent of the CSO-impacted area. Steep to moderate streambanks discourage access along approximately 34 percent of the area. Throughout the CSO area, Pogues Run is too shallow to support swimming by adults or children during dry weather, when people are most likely to seek out water recreation. The majority of the area has a depth between 6 and 12 inches during the recreational season.

2. Waters that are dangerous due to physical hazards such as swift currents, rapids, dams or shipping traffic

The U. S. Geological Survey does not maintain a gauging station on Pogues Run. However, the Pogues Run and Pleasant Run watersheds are very similar, so USGS data for Pleasant Run is used below. Wet weather events can transform the low flow nature of the stream into a dangerous and unsafe waterway, similar to Pleasant Run. Stream flows are dominated by combined sewer overflows and are not safe for recreational activities.

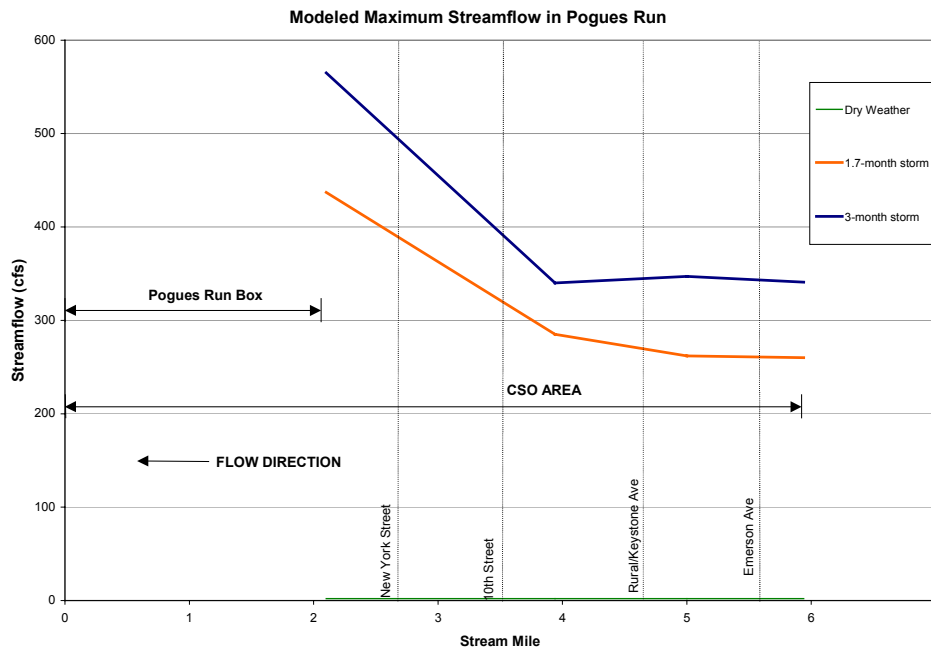
The first photograph below shows Pogues Run at low flow conditions in June 2001 downstream of Arsenal and 10th Street bridge near IPS School 101. The second photograph shows the same location immediately following a 1.25" rain event in October 2004. The clear water and low stream flows conducive to recreation have been replaced by fast-flowing, murky water following such a storm event.

Pogues Run



For purposes of the existing use determination, the city reviewed storm events greater than a 1.7-month storm. This storm was chosen as an example large storm that might not be controlled by the city's long-term control plan. Similar conditions in terms of flow, water quality, etc. would result from 2-month, 3-month or larger storms. As shown in the hydrograph below, modeled maximum stream flows due to a 1.7-month storm range from 260-440 cfs on Pogues Run. In comparison, modeled maximum stream flows due to a 3-month storm range from 340-565 cfs. During these infrequent storms, Pogues Run is not safe for recreation.

Pogues Run



One gauge of safety for water contact recreation is the safety of wading, since streams that are not safe for wading would also not be safe for swimming or other water contact activities. Each wader should know and strictly adhere to their personal wading abilities and limitations.

When stream flows are low, trained USGS employees measure stream discharge by wading into the stream. When stream flows are high or potentially dangerous, USGS hydrologists make discharge measurements using acoustic Doppler current meters deployed from a tethered boat. At the Arlington gauge on Pleasant Run, the USGS staff generally did not wade in flows above 16 cfs. Although USGS hydrologists occasionally waded at higher flows, they are equipped with a personal flotation device and have extensive wading safety training and experience. It would not be safe for an inexperienced person to wade the stream at such high flows. During rain events ranging from 1.7 months to 3 months, estimated stream flows range from 260 to 565 cfs and are too dangerous for wading or swimming.

Summary: Large storms create stream flows and velocities that are dangerous in Pogues Run, precluding use of the stream for water contact activities such as wading or swimming. These currents will continue to render Pogues Run unsafe for recreational activities during combined sewer overflow events. This data supports a finding of “no existing use” during storm events exceeding the 1.7-month storm on Pogues Run.

3. Limited extent of actual recreational uses

IDEM’s principles for making an existing use determination establish that “the occasional or incidental use by individual adults does not automatically establish an existing use for recreation.” (IDEM guidance, p. 51.) Therefore, the limited extent and frequency of actual uses of waterways should be a factor when determining whether a recreational use is an existing use. There are no community-sanctioned or privately owned recreational areas for swimming,

Pogues Run

kayaking or other recreational uses on the CSO-impacted portions of Pogues Run. However, some recreational uses do occur.

To establish the extent of actual recreational uses, the city conducted public meetings and a non-random face-to-face survey to collect data on how people use or have seen others use CSO-impacted waterways. Sources of information used by the city included:

- Physical stream survey in May-July 2001
- Public non-random intercept survey in June 2002 (Pogues Run Use Survey)
- Public outreach meetings with neighborhood associations, environmental activists and recreational groups in September-November 2002
- Marion County Health Department reports of stream use from 2001-2002
- Indy Parks stream use survey in October 2002

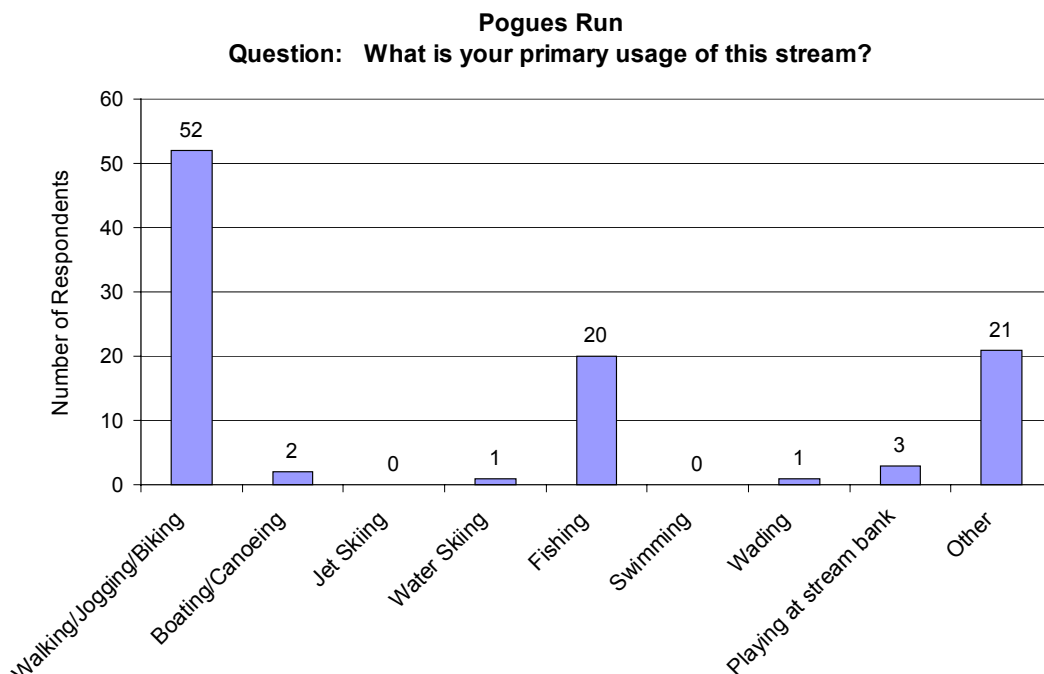
Location of Uses: Isolated recreational uses on Pogues Run in the CSO area are found predominantly along the parks and greenways located along this low-flow, neighborhood stream. Based upon the above data sources, the city identified two reported fishing locations, 11 reported playing-at-stream-bank locations, 13 reported wading locations, and two reported swimming locations on Pogues Run. Wading and playing by the stream bank are reported at various spots along the greenways, including Forest Manor Park, Brookside Park, Spades Park, and Highland Park. Fishing also is reported, although the fishing reported in this small stream involves hunting for crayfish rather than traditional sport fishing. Swimming is reported in two locations, although stream flows are too low to support full-body contact along most of Pogues Run. One small swimming hole was reported on Pogues Run in Brookside Park and another near Brookside Avenue. These are reportedly used occasionally by small numbers of neighborhood children. A map illustrating the observed and reported uses is located in Appendix C.

Extent of Uses: While some recreational activities do occur on Pogues Run within the CSO area, the number of people engaging in water contact activities and the frequency of those activities is limited. In the Pogues Run Use Survey, the primary recreational activity reported by people along Pogues Run was walking/jogging/biking (52 of 100 people surveyed). Less than 5 percent of respondents reported a primary use of swimming, wading or playing at stream bank, as shown in the graph below. For purposes of the survey, the following definitions were used:

- **Swimming:** Full-body contact with the water, including a high potential for swallowing the water (water should be deep enough to permit actual swimming)
- **Wading:** Partial body contact with the water (usually water contact to lower legs and possibly hands and arms)
- **Playing at the Stream Bank:** Kneeling, squatting or sitting at stream bank (some water contact may occur when hands reach into the water to touch or pick up something)
- **Fishing:** Fishing at the stream bank or from a boat (water contact occurs through handling fish and tackle)

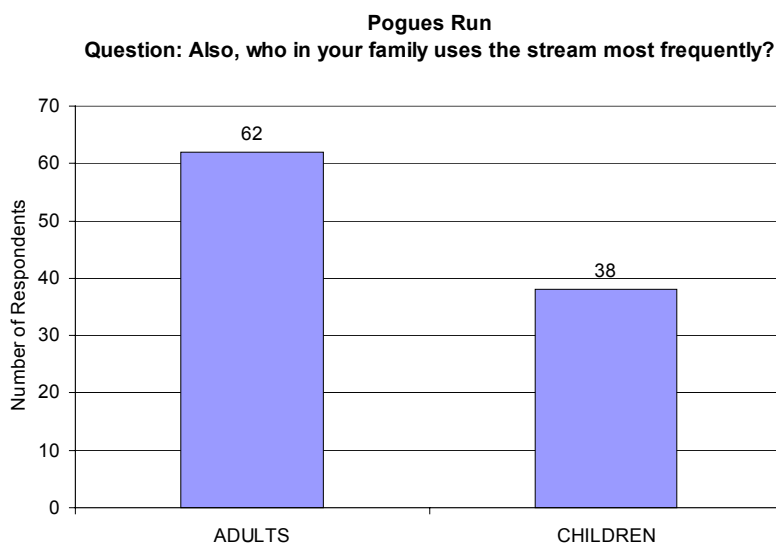
While the fishing definition above implies sport fishing, the fishing reported in this small stream usually involves hunting for crayfish.

Pogues Run



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Also according to the survey, adults are more likely than children to use Pogues Run for recreational activities.



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

According to the survey and additional neighborhood meetings to confirm the survey's findings, swimming is observed or practiced much less frequently than activities that do not involve full-body contact. The full results of the Pogues Run Use Survey are located in Appendix D. Note that the survey results cannot be extrapolated to the city's general population. The survey was designed to identify people most likely to use the waterways and was not conducted using random sampling. Nor is the sample size large enough to warrant extrapolation of the results to the general population.

Pogues Run

Frequency of Use: In a typical year, 30 percent of the respondents reported participating in recreational activities along Pogues Run every week and 26 percent reported less than once a month. These recreational activities include both water-contact and non-water-contact activities.

Summary: The city used a variety of data sources and public participation methods to gather information on the extent and frequency of water recreation activities in and along Pogues Run. Based upon this information, the city identified a number of locations where recreational uses occur along Pogues Run. The primary use of this waterway for 52 percent of respondents is walking, jogging and/or biking along the greenways adjoining the stream. Swimming, wading and other water-contact activities are reported much less frequently. In two locations where swimming is reported to occur, it is said to involve small numbers of children from adjacent neighborhoods. There are no public or private bathing beaches along Pogues Run.

4. Limited extent of recreational use during or immediately after a significant wet weather event.

Little evidence exists of full-body or partial-body contact recreational uses of CSO-impacted portions of Pogues Run, especially after significant wet weather events. Where there is evidence of use, it is very infrequent. Most respondents to the Pogues Run Use Survey indicated that recreational usage within 24 hours after a rainfall is observed infrequently or not at all. Sixty-six percent said that, based on their experience, they have seen adults or children playing in the stream when the current is slow, compared to 15 percent who have seen children or adults playing in the stream when the current is fast. Eighty-six percent of the interviewees also reported that use is infrequent (only once or twice a month) within 24 hours after a rainfall. However, 39 percent of respondents reported observing children or adults playing in the stream during or within 24 hours after a rainfall. The survey did not characterize the size of the rainfall events after which recreation was observed. Based on the answer to the question about fast or slow currents, people are more likely to recreate during dry weather or after a light rain than a major storm. The evidence collected by the city indicates that recreational use is rare or non-existent during and after large storm events.

5. Unsafe water quality combined with municipal programs that prevent and control access to the water.

IDEM guidance notes that unsafe water quality and municipal programs to prevent and control access may be a factor in determining an existing use:

If the water quality is unsafe and access to the water is precluded by (a) existing impediments to physical access such as steep banks, fencing or high retaining walls, then IDEM will not presume an existing recreational use. In order for IDEM to determine that access is precluded by the municipality, the municipality must take steps to actively prevent adults and children from actually using the water. This requires the municipality to prevent and control access to the water and to conduct a reasonable proactive outreach media and educational program to prevent actual use during and immediately following a significant wet weather event. This presumption will not apply to recreational beaches open to the public and other swimming areas designated for public recreation. (IDEM guidance, p. 51.)

Pogues Run

Information on the city's programs to prevent and control access to CSO-impacted waterways is presented in the introduction section to this submittal. Information documenting unsafe water quality on Pogues Run is presented below.

Water Quality: To demonstrate there is no existing recreational use under this factor, the city should demonstrate that recreational water quality standards are not achieved within the CSO-impacted area of Pogues Run during storm events. The table below provides a summary of in-stream water quality data collected in the CSO area of Pogues Run from 2000 – 2002 by the Indianapolis Office of Environmental Services and the Marion County Health Department. Results are shown for all data, dry weather data only and wet weather data. The data show that during wet weather, the geometric mean within the CSO area in Pogues Run was 934 *E. coli* colonies/100 mL, exceeding the state's recreational use standard of 125 cfu/100 mL. Nearly 80 percent of samples taken in wet weather periods exceed the single sample standard of 235 cfu/100 mL.

Pogues Run *E. coli* Bacteria Compliance (CSO Area)

Data Source	Geometric Mean of 2000-2002 data ¹	% of Samples > 235 cfu/100 mL	Total Number of Samples
All Data	481	64.9%	536
Dry Weather Data	251	51.3%	271
Wet Weather Data	934	78.9%	265

⁽¹⁾ Indiana's standard for geometric mean is 125 cfu/100 mL.

To determine whether water quality standards are being met in the CSO area of Pogues Run, the city further analyzed in-stream water quality data collected in 2000-2002. Based upon a NetStorm simulation of LTCP Systemwide Control Plan 1, the city identified 17 storm events that would have resulted in untreated overflows if the city had installed CSO control facilities that achieve 95 percent capture. The city does not have data to correlate to all 17 storm events, since the city's existing sampling program is designed to collect data on a periodic basis without regard to weather conditions. However, on the days when existing 2000-2002 data could be correlated to an estimated overflow event, the data consistently show that the single sample maximum standard of 235 *E. coli* colonies/100 mL is not being met. This demonstrates that the CSO area of Pogues Run is unsafe for recreational use during and after those storm events. These types of storm events would have caused overflow events both before and after November 28, 1975, the date after which an existing use must be protected if it has been "attained."

Pogues Run

POGUES RUN COMPARISON OF ESTIMATED OVERFLOW EVENTS AND HISTORICAL E. COLI BACTERIA SAMPLING 2000-2002									
Estimated Overflow Event Date (93% Capture)	Date of Sample	New York OES (cfu/100 mL)	21st St OES (cfu/100 mL)	Brookside OES (cfu/100 mL)	21st St (cfu/100 mL)	Rural (cfu/100 mL)	10th St (cfu/100 mL)	New York (cfu/100 mL)	Average (cfu/100 mL)
4/7/00	4/7/00	N/A	N/A	N/A	1,900	700	1,200	3,300	1,800
5/26/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/4/00	7/5/00	N/A	N/A	N/A	3,000	7,500	8,000	8,000	6,600
8/17/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/10/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/4/00	10/5/00	89,000	20,000	N/A	N/A	N/A	N/A	N/A	54,500
4/10/01	4/10/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/5/01	6/5/01	N/A	N/A	N/A	4,570	3,270	2,430	4,500	3,700
7/1/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/10/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/24/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/24/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/7/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/12/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/20/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/10/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Estimated Overflow Dates: 1950-2003 NetSTORM Simulation for System Wide Plan 1, 93% Capture Level of Control.

Sampling Data: 2000 - 2002 instream *E. coli* bacteria sampling by OES and MCHD.

Note: Sampling data is presented only for dates on or following the estimated overflow event date, and for locations within the CSO area.

Summary

Although occasional recreational uses occur along CSO-impacted areas of Pogues Run, these should not be considered existing uses under 40 CFR 131.3(e) based upon the following factors:

1. Physical access and flow that are unsuitable for recreational use during large storm events, such as those exceeding a 1.7-month storm;
2. Waters that are dangerous during large storm events due to swift currents and rapids
3. Limited extent and frequency of actual recreational uses
4. Minimal recreational use during or immediately after significant wet weather events;
5. Unsafe water quality combined with extensive municipal programs to prevent and control access to the water following wet weather events.

Furthermore, the physical and water quality conditions of the CSO-impacted areas of Pogues Run make primary and secondary contact recreational activities unsuitable, undesirable, and unsafe during significant wet weather events. Based upon this data, we conclude that full-body or partial-body contact recreation is not an existing use of the CSO-impacted areas of Pogues Run during storm events exceeding the 1.7-month storm. Therefore, we request that IDEM affirm the city's conclusion and allow the city to proceed with a UAA to evaluate the attainable uses of the CSO area of Pogues Run during the periods and conditions under which we contemplate having residual overflows.

Appendices:

- A. Physical Stream Survey Maps and Tables
- B. See USGS hydrograph for Pleasant Run
- C. Pogues Run Recreational Use Map
- D. 2002 Pogues Run Use Survey

Reference:

U.S. Geological Survey, 1996. Low-Flow Characteristics of Indiana Streams. USGS Water Resources Investigation Report 96-4128. Page 130.

Information Supporting Pleasant Run/Bean Creek Existing Use Determination

Within the CSO area, some citizens occasionally use Indianapolis streams for full- or partial-body contact recreation, based upon surveys conducted by the City of Indianapolis. However, although actual recreational uses may occur on a sporadic basis, other factors preclude an existing use determination. Documentation supporting factors 1-4 on Pleasant Run is provided below and in the attachments.

The city is seeking a “no existing use” determination under 40 CFR 131.3(e) for the CSO area of Pleasant Run, which extends from 9th Street to the confluence with the White River, and of Bean Creek, from State Street to its confluence with Pleasant Run in Garfield Park.

1. Lack of proximity to residential neighborhoods, parks and schools and/or presence of physical hazards, access, flow or substrate that make such areas unsuitable for recreational use

IDEM’s principles for making an existing use determination note that physical access, flow and substrate are factors to consider. (IDEM guidance, p. 51) IDEM also recognizes that waters may be too shallow during dry periods to allow for adult swimming. The City of Indianapolis collected the information below on Pleasant Run’s physical access, flow and substrate to support IDEM’s existing use determination. The CSO-impacted portion of Bean Creek has much the same physical character as described for Pleasant Run.

Physical Access: During a physical stream survey in May-July 2001, the city collected data on the slopes of stream banks and presence of vegetation along CSO-impacted waterways. Maps and tables summarizing the data collected are provided in Appendix A. Although Pleasant Run is accessible in some areas, dense vegetation or steep slopes discourage use in other areas:

- Dense vegetation (dense brush) covers approximately 75 percent of the stream banks from Pleasant Run Golf Course to the confluence with White River. The rest of the area has 12 percent medium vegetation (some brush) and 13 percent light vegetation (grass).
- Steep slopes (greater than 1:1 ratio) discourage use for about 43 percent of the Pleasant Run stream bank; moderate slopes (approximately 1:1) affect about 28 percent of the stream bank in the CSO area.
- Approximately 50 percent of the stream flows through city parkland. The remainder flows through urban and industrial areas.

Between 10th Street and Bluff Road, Pleasant Run flows through Pleasant Run Golf Course, 3 city parks (Ellenberger, Christian, and Garfield) and the wide Pleasant Run Greenway. Dense vegetation and steep slopes limit accessibility in some locations. However, there are access points used by the public in the parks and along the greenway. From English Avenue to Prospect Street, Pleasant Run flows through the Citizens Gas and Coke Utility property. Throughout the Citizen’s Gas facility there is light vegetation along the stream and steep, unstable banks. Pleasant Run is not accessible to the public as it flows through the Citizen’s Gas complex.

Bluff Road to White River is a short (approximately 0.5 mile) downstream section of Pleasant Run that has been channelized. This reach runs through the Bluff Road industrial corridor. Streamside vegetation is primarily invasive bush honeysuckle with some areas of mown turfgrass. Stream banks in this reach are steep and unstable; erosional slumps are common. This reach of Pleasant Run is fairly accessible. Dense vegetation can limit access at some points, but that

Pleasant Run/Bean Creek

vegetation is not continuous. There is some limited accessibility near the Bluff Road industrial corridor.

Stream Flow and Depth: Stream flow in Pleasant Run is highly variable and is related to precipitation. Flow in Pleasant Run is generally highest in the late winter and early spring and, occasionally, during the summer following intense rainfall. Both high and low stream flows can significantly affect water quality. During wet weather, most of the flow in Pleasant Run comes from CSO outfalls. To demonstrate the variability in flow, a hydrograph of U.S. Geological Survey flow gauge data is provided in Appendix B. Stream flow during wet weather is described in more detail under Factor 2 below.

Stream depth varies in the CSO-impacted portions of Pleasant Run and Bean Creek, ranging from 6 inches to 1 foot deep during dry weather.

Substrate: The substrate in Pleasant Run is mostly sand, rocks, and pebbles. Although the substrate in Pleasant Run is suitable for wading, dense vegetation and steep to moderate streambanks limit the access to most of these areas.

Summary: Although Pleasant Run is accessible to the public in some areas, its dense vegetation, steep-to-medium slopes, and low stream flow make the waterway undesirable for full-body or partial-body contact recreational activities. Dense vegetation covers the streambanks and discourages public access along 75 percent of the CSO-impacted area. Steep to moderate streambanks discourage access along approximately 70 percent of the area. Throughout the CSO area, most of Pleasant Run is too shallow to support swimming by adults or children during dry weather, when people are most likely to seek out water recreation. The majority of the area has a depth between 6 and 12 inches during the recreational season.

2. Waters that are dangerous due to physical hazards such as swift currents, rapids, dams or shipping traffic

The U.S. Geological Survey maintains a gauging station on Pleasant Run at Arlington Avenue (i.e., 7.9 river-miles upstream of its mouth). The drainage area above this gauging station is 7.58 square miles. Based on low flow measurements taken from 1943-1993, the Q7-10 is 0.1 cubic feet per second (cfs). The average flow for Pleasant Run at the USGS gauge is 8.17 cfs (USGS, 1996). Wet weather events can transform the low flow nature of the stream into a dangerous waterway, as shown in the photographs below. The first photograph shows an area known locally as “Pleasant Run Falls” during dry weather. Note the extremely low stream flow at the far right hand corner of the photograph.

Pleasant Run/Bean Creek

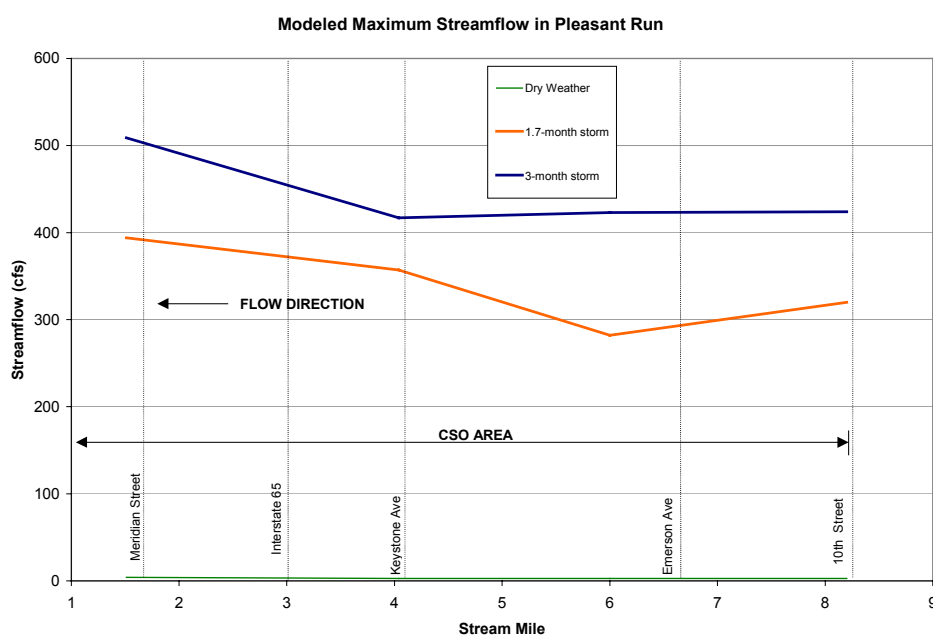


The photograph below shows the same location following a 1.91-inch rainfall. Stream flows are dominated by discharges from combined sewer overflows and are too dangerous for recreational activities.



Pleasant Run/Bean Creek

For purposes of the existing use determination, the city reviewed storm events greater than a 1.7-month storm. This storm was chosen as an example large storm that might not be controlled by the city's long-term control plan. Similar conditions in terms of flow, water quality, etc. would result from 2-month, 3-month or larger storms. As shown in the hydrograph below, estimated maximum stream flows due to a 1.7-month storm range from 280-395 cfs in the CSO area of Pleasant Run. In comparison, modeled maximum stream flows due to a 3-month storm range from 415-510 cfs. During these infrequent storms, Pleasant Run and Bean Creek are not safe for recreation.



One gauge of safety for water contact recreation is the safety of wading, since streams that are not safe for wading would also not be safe for swimming or other full-body or partial-body contact activities. Each wader should know and strictly adhere to their personal wading abilities and limitations.

When stream flows are low, trained USGS employees measure stream discharge by wading into the stream. When stream flows are high or potentially dangerous, USGS hydrologists make discharge measurements using acoustic Doppler current meters deployed from a tethered boat. At the Arlington gauge on Pleasant Run, the USGS staff generally did not wade in flows above 16 cfs. Although USGS hydrologists occasionally waded at higher flows, they are equipped with a personal flotation device and have extensive wading safety training and experience. It would not be safe for an inexperienced person to wade the stream at such high flows. During rain events ranging from 1.7 months to 3 months, estimated stream flows range from 280 to 510 cfs and are too dangerous for wading. Although wading is reported in some locations along Pleasant Run and Bean Creek, it is not known to occur during stream flows occurring from a 1.7-month storm or greater.

Summary: Large storms create high stream flows that are dangerous in Pleasant Run and Bean Creek, precluding use of the streams for water contact activities such as wading or swimming. These currents will continue to render Pleasant Run and Bean Creek unsafe for recreational activities during combined sewer overflow events. This data supports a finding of “no existing use” during storm events exceeding the 1.7-month storm on Pleasant Run and Bean Creek.

3. Limited extent of actual recreational uses

IDEM's principles for making an existing use determination establish that "the occasional or incidental use by individual adults does not automatically establish an existing use for recreation." (IDEM guidance, p. 51.) Therefore, the limited extent and frequency of actual uses of waterways should be a factor when determining whether a recreational use is an existing use. There are no community-sanctioned or privately owned recreational areas for swimming, kayaking or other recreational uses on the CSO-impacted portions of Pleasant Run and Bean Creek. However, some recreational uses do occur.

To establish the extent of actual recreational uses, the city conducted public meetings and a non-random face-to-face survey to collect data on how people use or have seen others use CSO-impacted waterways. Sources of information used by the city included:

- Physical stream survey in May-July 2001
- Public non-random intercept survey in June 2002 (Pleasant Run Use Survey)
- Public outreach meetings with neighborhood associations, environmental activists and recreational groups in September-November 2002
- Marion County Health Department reports of stream use from 2001-2002
- Indy Parks stream use survey in October 2002

Location of Uses: Isolated recreational uses on Pleasant Run and Bean Creek in the CSO area are found predominantly along the many parks and greenways located along this low-flow, neighborhood stream. Based upon the above data sources, the city identified two reported fishing locations, 16 reported playing-at-stream-bank locations, 9 reported wading locations, and three reported swimming locations on Pleasant Run. Wading and playing by the stream bank are reported at various spots along the greenways, including Pleasant Run Golf Course, Ellenberger Park, Christian Park, and Garfield Park. Fishing also is reported, although the fishing reported in this small stream involves hunting for crayfish rather than traditional sport fishing. Swimming is reported in three locations, although stream flows are too low to support full-body contact along most of Pleasant Run/Bean Creek. One small swimming hole was reported on Pleasant Run downstream of Prospect Street and another along Bean Creek near Keystone Avenue. These are reportedly used occasionally by small numbers of neighborhood children. A third reported swimming hole, between Meridian and Bluff, is believed to refer to a gravel pit just north of Pleasant Run and not physically linked to its waters. A map illustrating the observed and reported uses is located in Appendix C.

Extent of Uses: While some recreational activities do occur on Pleasant Run/Bean Creek within the CSO area, the number of people engaging in water contact activities and the frequency of those activities is limited. In the Pleasant Run Use Survey, the primary recreational activity reported by people along Pleasant Run was walking/jogging/biking (82 of 100 people surveyed). Less than 5 percent of respondents reported a primary use of fishing, swimming, wading or playing at stream bank, as shown in the graph below. For purposes of the survey, the following definitions were used:

- **Swimming:** Full-body contact with the water, including a high potential for swallowing the water (water should be deep enough to permit actual swimming)
- **Wading:** Partial body contact with the water (usually water contact to lower legs and possibly hands and arms)

Pleasant Run/Bean Creek

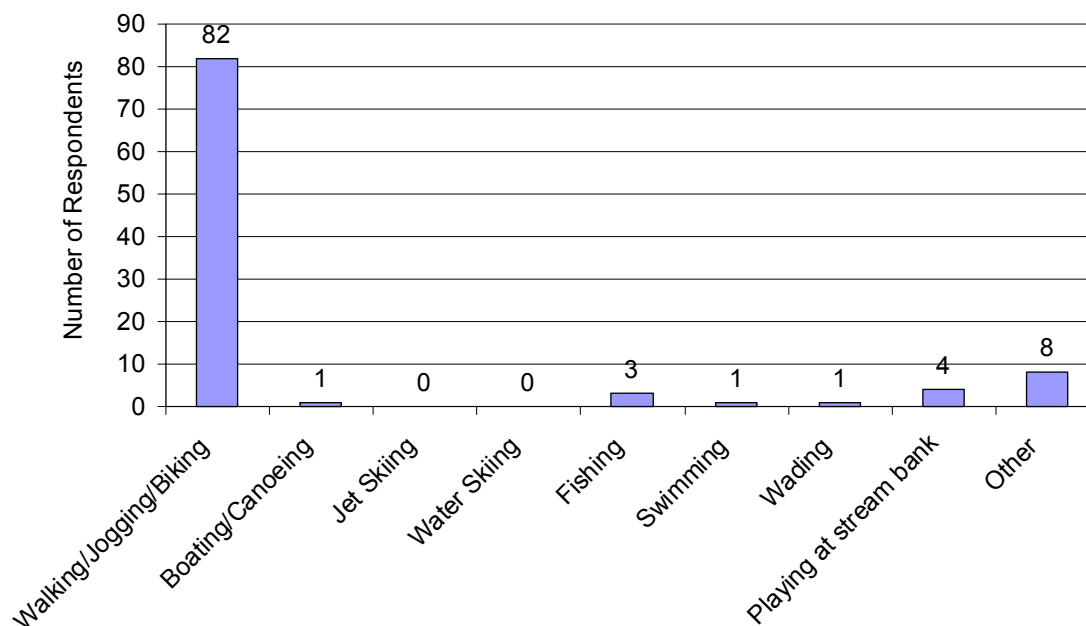
- **Playing at the Stream Bank:** Kneeling, squatting or sitting at stream bank (some water contact may occur when hands reach into the water to touch or pick up something)
- **Fishing:** Fishing at the stream bank or from a boat (water contact occurs through handling fish and tackle)

While the fishing definition above implies sport fishing, the fishing reported in this small stream usually involves hunting for crayfish.

Pleasant Run/Bean Creek

Pleasant Run

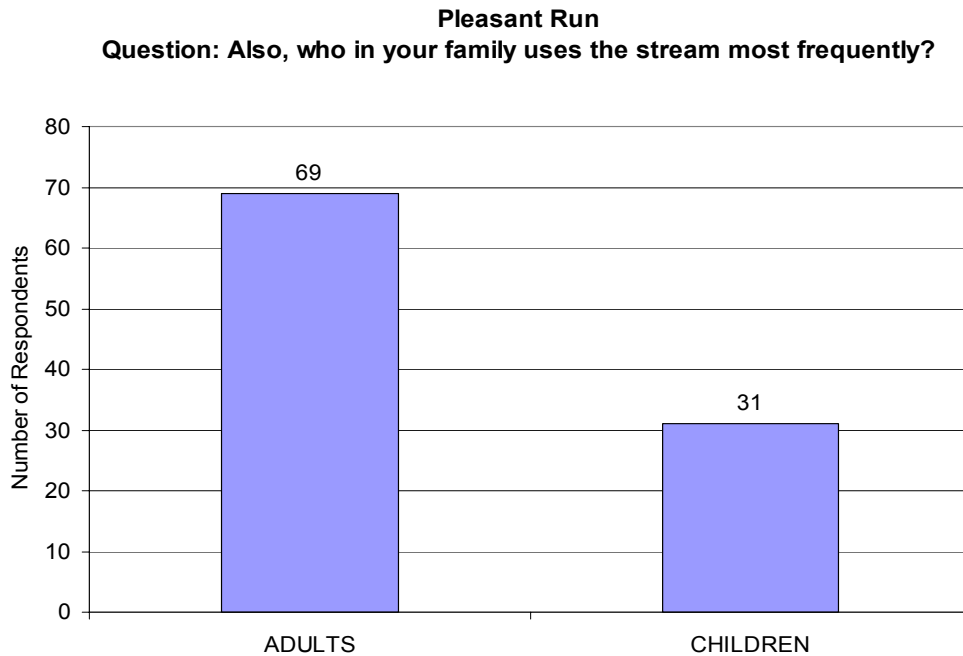
Question: What is your primary usage of this stream?



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Pleasant Run/Bean Creek

Also according to the survey, adults are more likely than children to use Pleasant Run for recreational activities.



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

According to the survey and additional neighborhood meetings to confirm the survey's findings, swimming is observed or practiced much less frequently than activities that do not involve full-body contact. The full results of the Pleasant Run/Bean Creek Use Survey are located in Appendix D. Note that the survey results cannot be extrapolated to the city's general population. The survey was designed to identify people most likely to use the waterways and was not conducted using random sampling. Nor is the sample size large enough to warrant extrapolation of the results to the general population.

Frequency of Use: In a typical year, 47 percent of the respondents reported participating in recreational activities along Pleasant Run every week and 13 percent reported less than once a month. These recreational activities include both water-contact and non-water-contact activities.

Summary: The city used a variety of data sources and public participation methods to gather information on the extent and frequency of water recreation activities in and along Pleasant Run. Based upon this information, the city identified a number of locations where recreational uses occur along Pleasant Run. The primary use of this waterway for 82 percent of respondents is walking, jogging and/or biking along the greenways adjoining the stream. Swimming, wading and other water-contact activities are reported much less frequently. In two locations where swimming is reported to occur, it is said to involve small numbers of children from adjacent neighborhoods. There are no public or private bathing beaches along Pleasant Run or Bean Creek.

4. Limited extent of recreational use during or immediately after a significant wet weather event.

Little evidence exists of full-body or partial-body contact recreational uses of CSO-impacted portions of Pleasant Run and Bean Creek, especially after significant wet weather events. Where there is evidence of use, it is very infrequent. Most respondents to the Pleasant Run/Bean Creek Use Survey indicated that recreational usage within 24 hours after a rainfall is observed infrequently or not at all. Eight-four percent said that, based on their experience, they have seen adults or children playing in the stream when the current is slow, compared to 11 percent who have seen children or adults playing in the stream when the current is fast. Sixty-nine percent of the interviewees also reported that use is infrequent (only once or twice a month) within 24 hours after a rainfall. However, 66 percent of respondents reported observing children or adults playing in the stream during or within 24 hours after a rainfall. The survey did not characterize the size of the rainfall events after which recreation was observed. Based on the answer to the question about fast or slow currents, people are more likely to recreate in dry weather or after a light rain than a major storm. The evidence collected by the city indicates that recreational use is rare or non-existent during and after large storm events.

5. Unsafe water quality combined with municipal programs that prevent and control access to the water.

IDEM guidance notes that unsafe water quality and municipal programs to prevent and control access may be a factor in determining an existing use:

If the water quality is unsafe and access to the water is precluded by (a) existing impediments to physical access such as steep banks, fencing or high retaining walls, then IDEM will not presume an existing recreational use. In order for IDEM to determine that access is precluded by the municipality, the municipality must take steps to actively prevent adults and children from actually using the water. This requires the municipality to prevent and control access to the water and to conduct a reasonable proactive outreach media and educational program to prevent actual use during and immediately following a significant wet weather event. This presumption will not apply to recreational beaches open to the public and other swimming areas designated for public recreation. (IDEM guidance, p. 51.)

Information on the city's programs to prevent and control access to CSO-impacted waterways is presented in the introduction section to this submittal. Information documenting unsafe water quality on Pleasant Run and Bean Creek is presented below.

Water Quality: To demonstrate there is no existing recreational use under this factor, the city should demonstrate that recreational water quality standards are not achieved within the CSO-impacted area of Pleasant Run and Bean Creek during storm events. The table below provides a summary of in-stream water quality data collected in the CSO area of Pleasant Run and Bean Creek from 2000 – 2002 by the Indianapolis Office of Environmental Services and the Marion County Health Department. Results are shown for all data, dry weather data only and wet weather data. The data show that during wet weather, the geometric mean within the CSO area in Pleasant Run was 676 *E. coli* colonies/100 mL and in Bean Creek was 625 *E. coli* colonies/100 mL, both exceeding the state's recreational use standard of 125 cfu/100 mL. More than 66 percent of Pleasant Run samples and 72 percent of Bean Creek samples taken in wet weather periods exceed the single sample standard of 235 cfu/100 mL.

Pleasant Run/Bean Creek

Pleasant Run and Bean Creek *E. coli* Bacteria Compliance (CSO Area)

Data Source	Geometric Mean of 2000-2002 data ¹	% of Samples > 235 cfu/100 mL	Total Number of Samples
Pleasant Run -All Data	413	59.5%	862
Bean Creek - All Data	466	71.3%	178
Pleasant Run - Dry Weather Data	269	53.8%	461
Bean Creek - Dry Weather Data	346	70.5%	88
Pleasant Run - Wet Weather Data	676	66.1%	401
Bean Creek - Wet Weather Data	625	72.2%	90

⁽¹⁾ Indiana's standard for geometric mean is 125 cfu/100 mL.

To determine whether water quality standards are being met in the CSO area of Pleasant Run and Bean Creek during or after large storm events, the city further analyzed in-stream water quality data collected in 2000-2002. Based upon a NetStorm simulation of LTCP Systemwide Control Plan 1, the city identified 17 storm events that would have resulted in untreated overflows if the city had installed CSO control facilities that achieve 93 percent capture. The city does not have data to correlate to all 17 storm events, since the city's existing sampling program is designed to collect data on a periodic basis without regard to weather conditions. However, on the days when existing 2000-2002 data could be correlated to an estimated overflow event, the data consistently show that the single sample maximum standard of 235 *E. coli* colonies/100 mL is not being met. This demonstrates that the CSO area of Pleasant Run and Bean Creek are unsafe for recreational use during and after those storm events. These types of storm events would have caused overflow events both before and after November 28, 1975, the date after which an existing use must be protected if it has been "attained."

PLEASANT RUN COMPARISON OF ESTIMATED OVERFLOW EVENTS AND HISTORICAL <i>E. COLI</i> BACTERIA SAMPLING 2000-2002								
Estimated Overflow Event Date (93% Capture)	Date of Sample	Meridian St OES (cfu/100 mL)	Arlington (cfu/100 mL)	Southeastern (cfu/100 mL)	Barth (cfu/100 mL)	Garfield Park (cfu/100 mL)	Bluff (cfu/100 mL)	Average (cfu/100 mL)
4/7/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/26/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/4/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/17/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/10/00	9/11/00	N/A	4,190	6,090	6,090	4,410	5,560	5,300
10/4/00	10/5/00	108,000	N/A	N/A	N/A	N/A	N/A	N/A
4/10/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/5/01	6/6/01	N/A	46,110	77,010	81,640	92,080	64,880	72,300
7/1/01	7/2/01	N/A	17,250	36,090	36,540	17,230	15,290	24,500
10/10/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/24/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/24/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/7/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/12/02	5/13/02	8,000	N/A	3,160	4,800	4,800	9,200	6,000
9/20/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/10/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Estimated Overflow Dates: 1950-2003 NetSTORM Simulation for System Wide Plan 1, 93% Capture Level of Control.

Sampling Data: 2000 - 2002 instream *E. coli* bacteria sampling by OES and MCHD.

Note: Sampling data is presented only for dates on or following the estimated overflow event date, and for locations within the CSO area.

Pleasant Run/Bean Creek

BEAN CREEK COMPARISON OF ESTIMATED OVERFLOW EVENTS AND HISTORICAL E. COLI BACTERIA SAMPLING 2000-2002					
Estimated Overflow Event Date (93% Capture)	Date of Sample	Southern - OES (cfu/100 mL)	Garfield Park - OES (cfu/100 mL)	Garfield Park (cfu/100 mL)	Average (cfu/100 mL)
4/7/00	N/A	N/A	N/A	N/A	N/A
5/26/00	N/A	N/A	N/A	N/A	N/A
7/4/00	N/A	N/A	N/A	N/A	N/A
8/17/00	N/A	N/A	N/A	N/A	N/A
9/10/00	9/11/00	N/A	N/A	7,940	N/A
10/4/00	10/5/00	40,000	200,000	N/A	120,000
4/10/01	N/A	N/A	N/A	N/A	N/A
6/5/01	6/6/01	N/A	N/A	16,640	N/A
7/1/01	7/2/01	N/A	N/A	31,300	N/A
10/10/01	N/A	N/A	N/A	N/A	N/A
10/24/01	N/A	N/A	N/A	N/A	N/A
4/21/02	N/A	N/A	N/A	N/A	N/A
4/24/02	N/A	N/A	N/A	N/A	N/A
4/27/02	N/A	N/A	N/A	N/A	N/A
5/7/02	N/A	N/A	N/A	N/A	N/A
5/12/02	5/13/02	2,700	N/A	3,600	3,200
9/20/02	N/A	N/A	N/A	N/A	N/A
11/10/02	N/A	N/A	N/A	N/A	N/A

Source: Estimated Overflow Dates: 1950-2003 NetSTORM Simulation for System Wide Plan 1,
93% Capture Level of Control.

Sampling Data: 2000 - 2002 instream *E. coli* bacteria sampling by OES and MCHD.

Note: Sampling data is presented only for dates on or following the estimated overflow event date,
and for locations within the CSO area.

Summary

Although occasional recreational uses occur along the CSO-impacted areas of Pleasant Run and Bean Creek, these should not be considered existing uses under 40 CFR 131.3(e) based upon the following factors:

1. Physical access and flow that are unsuitable for recreational use during large storm events, such as those exceeding a 1.7-month storm;
2. Waters that are dangerous during large storm events due to swift currents and rapids
3. Limited extent and frequency of actual recreational uses
4. Minimal recreational use during or immediately after significant wet weather events;
5. Unsafe water quality combined with extensive municipal programs to prevent and control access to the water following wet weather events.

Furthermore, the physical and water quality conditions of Pleasant Run downstream of 9th Street and Bean Creek downstream of State Street make primary and secondary contact recreational activities unsuitable, undesirable, and unsafe during significant wet weather events. Based upon this data, we conclude that full-body or partial-body contact recreation is not an existing use of Pleasant Run downstream of 9th Street or Bean Creek downstream of State Street during storm events exceeding the 1.7-month storm. Therefore, we request that IDEM affirm the city's

Pleasant Run/Bean Creek

conclusion and allow the city to proceed with a UAA to evaluate the attainable uses of the CSO area of Pleasant Run and Bean Creek during the periods and conditions under which we contemplate having residual overflows.

Appendices:

- A. Physical Stream Survey Maps and Tables
- B. USGS flow graph
- C. Pleasant Run Recreational Use Map
- D. 2002 Pleasant Run Use Survey

Reference:

U.S. Geological Survey, 1996. Low-Flow Characteristics of Indiana Streams. USGS Water Resources Investigation Report 96-4128. Page 130.

Information Supporting White River Existing Use Determination

Within the CSO area, some citizens occasionally use Indianapolis streams for full- or partial-body contact recreation, based upon surveys conducted by the City of Indianapolis. However, although actual recreational uses may occur on a sporadic basis, other factors preclude an existing use determination. Documentation supporting factors 1-4 on White River is provided below and in the attachments.

The city is seeking a “no existing use” determination under 40 CFR 131.3(e) for the area of the White River impacted by Indianapolis CSOs. This area extends from a location just west of East 56th Street and Westfield Boulevard on the Indianapolis northside to State Road 58 near Elnora, just south of the Greene-Davies county line in southwestern Indiana. See Figure 2-2a for the upstream boundary of the CSO area on White River.

1. Lack of proximity to residential neighborhoods, parks and schools and/or presence of physical hazards, access, flow or substrate that make such areas unsuitable for recreational use

IDEM’s principles for making an existing use determination note that physical access, flow and substrate are factors to consider. (IDEM guidance, p. 51) IDEM also recognizes that waters may be too shallow during dry periods to allow for adult swimming. The City of Indianapolis collected the following information on White River’s physical access, flow and substrate to support IDEM’s existing use determination:

Physical Access: During a physical stream survey in May-July 2001, the city collected data on the slopes of stream banks and presence of vegetation along CSO-impacted waterways inside Marion County. Maps and tables summarizing the data collected are provided in Appendix A. Although White River is accessible in some places, dense vegetation or steep slopes discourage use in other areas:

- Dense vegetation (dense brush) covers approximately 72 percent of the stream banks from Holliday Park to just south of I-465. The rest of the area has 12 percent medium vegetation (some brush) and 16 percent light vegetation (grass).
- Steep slopes (greater than 1:1 ratio) discourage use for about 31 percent of the White River stream bank; moderate slopes (approximately 1:1) affect about 29 percent of the stream bank in the CSO area.
- White River flows through city parkland, state parkland, residential, urban, industrial and agricultural areas.

Land use along the White River between Holliday Park and 42nd Street tends to be primarily low density residential. Much of the channel in this section is tree lined. Stream accessibility is mixed in this reach. While accessibility is good in public areas such as Holliday and Friedman Parks, much of this reach flows through low-density residential areas where access is restricted to individual landowners and their neighbors.

Between 42nd Street and 16th Street, land use is mixed, with much of the river bordered by city parks and golf courses. The central portion of this section, upstream of the dam, is locally known as Lake Indy. This portion of the river is very accessible as it flows through city parks and golf courses. There is a public boat launch in Riverside Park.

White River

The section from the Emrichsville Dam at 16th Street to Morris Street is the most urban portion of the White River in Indianapolis. Land use in this section is high density residential, mixed industry, and mixed urban. The floodplain in this section is restricted by the levees; much of the floodplain is maintained as turfgrass, with few trees along the channel. White River State Park also is located along this stream reach. Accessibility is mixed in this reach. While the levees are steep, there are frequent unofficial access points that allow vehicles onto the floodplain. Along the east bank of the river in the lower portions of this reach access is restricted by industrial development.

From Morris Street south to County Line Road, the White River begins to lose its urban character. The river begins to meander downstream of Stout Dam, and pool and riffle sequences begin to develop. Land use in this section is predominately aggregate mining and agriculture with some light residential. The aggregate mining and industry in the area limit access to the river in this section.

Stream Flow and Depth: Stream flow in White River is highly variable and is related to precipitation. Flow in White River is generally highest in the late winter and early spring and, occasionally, during the summer following intense rainfall. Both high and low stream flows can significantly affect water quality. To demonstrate the variability in flow, a hydrograph of U.S. Geological Survey flow gauge data is provided in Appendix B. Stream flow during wet weather is described in more detail under Factor 2 below.

Stream depth varies in the CSO-impacted portions of White River, ranging from 2-3 feet in most areas during dry weather, according to the 2001 stream survey conducted within Marion County. However, pools in some locations can be greater than 10 feet in depth. Currents in the stream also can be strongest in the deepest parts of the channel.

Substrate: The substrate in the downtown area (from the 16th Street Dam to the Perry K Dam) is silt and does not encourage wading. In areas of the White River where the substrate consists mostly of sand, rocks and pebbles and is suitable for wading, most of the associated streambanks have a high slope and are covered by dense vegetation that discourages public access.

Summary: Although White River is accessible to the public in some areas, its dense vegetation and steep-to-medium slopes make the waterway undesirable for full-body or partial-body contact recreational activities. Dense vegetation covers the streambanks and discourages public access along 72 percent of the CSO-impacted area. Steep to moderate streambanks discourage access along approximately 60 percent of the area.

2. Waters that are dangerous due to physical hazards such as swift currents, rapids, dams or shipping traffic

The U.S. Geological Survey maintains a gauging station on the White River at the Morris Street Bridge at river-mile 230.3 (i.e., 2.6 river-miles downstream from Fall Creek, 3.4 river-miles upstream from Eagle Creek and 4.0 river-miles upstream from Indianapolis Power and Light dam). Wet weather events can transform the nature of the river into a dangerous waterway, as shown in the photographs below.

The first photograph shows an area looking downstream from Perry K dam during dry weather. Note the sandbank at the far side of the stream in the photograph.

White River

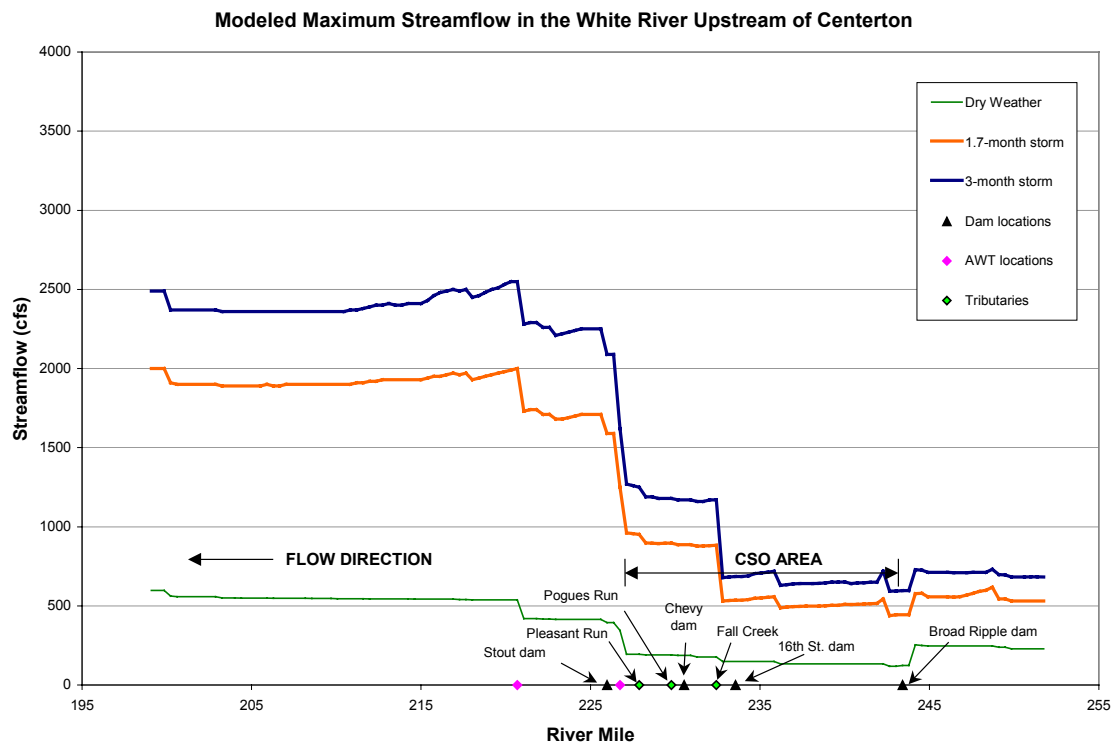


The photograph below shows the same location following approximately 1.1 inches of rainfall. Stream flows during wet weather event generate undertows and surface currents that are too dangerous for full-body or partial-body contact recreational activities.



For purposes of the existing use determination, the city reviewed storm events greater than a 1.7-month storm. This storm was chosen as an example large storm that might not be controlled by the city's long-term control plan. Similar conditions in terms of flow, water quality, etc. would result from 2-month, 3-month or larger storms. As shown in the hydrograph below, modeled maximum stream flows due to a 1.7-month storm range from 440-2000 cfs in White River. In comparison, modeled maximum stream flows due to a 3-month storm range from 595 to 2550 cfs. During these infrequent storms, White River is not safe for recreation.

White River



One gauge of safety for water contact recreation is the safety of wading, since streams that are not safe for wading would also not be safe for swimming or other water contact activities. Each wader should know and strictly adhere to their personal wading abilities and limitations.

When stream flows are low, trained USGS employees measure stream discharge by wading into the stream. When stream flows are high or potentially dangerous, USGS hydrologists make discharge measurements using acoustic Doppler current meters deployed from a tethered boat. At the Morris Street gauge, the USGS staff generally did not wade in flows above 540 cfs. Although USGS hydrologists occasionally waded at higher flows, they are equipped with a personal flotation device and have extensive wading safety training and experience. It would not be safe for an inexperienced person to wade the stream at such high flows. During rain events ranging from 1.7 months to 3 months, estimated stream flows range from 440-2550 cfs and are too dangerous for wading. Although wading and swimming are reported in some locations within the CSO-impacted areas of White River, they are not known to occur extensively or frequently under stream flows occurring from a 1.7-month storm or greater.

Summary: Large storms create stream flows and velocities that are dangerous in White River, precluding use of the stream for water contact activities such as wading or swimming. These currents will continue to render White River unsafe for recreational activities during combined sewer overflow events. This data supports a finding of “no existing use” during storm events exceeding the 1.7-month storm on White River.

3. Limited extent of actual recreational uses

IDEM’s principles for making an existing use determination establish that “the occasional or incidental use by individual adults does not automatically establish an existing use for

White River

recreation.” (IDEM guidance, p. 51.) Therefore, the limited extent and frequency of actual uses of waterways should be a factor when determining whether a recreational use is an existing use. There are no community-sanctioned or privately owned recreational areas for swimming on the CSO-impacted portions of White River. There is one city-owned boat launch in Marion County within the CSO area and approximately seven state-authorized public access points downstream of Marion County. The city’s research has shown that recreational uses do occur on White River, but not extensively or frequently during or after large storm events.

To establish the extent of actual recreational uses, the city conducted public meetings and a non-random face-to-face survey to collect data on how people use or have seen others use CSO-impacted waterways. Sources of information used by the city included:

- Physical stream survey in May-July 2001
- Public non-random intercept survey in June 2002 (White River Use Survey)
- Public outreach meetings with neighborhood associations, environmental activists and recreational groups in September-November 2002
- Marion County Health Department reports of stream use from 2001-2002
- Indy Parks stream use survey in October 2002
- Downstream County and State Agencies Survey

Location of Uses: Recreational uses on White River in the CSO area within Marion County are found predominantly along the many parks and greenways located along this low-flow river. Based upon the above data sources, the city identified 43 reported fishing locations, nine reported playing-at-stream-bank locations, 15 reported wading locations, 10 reported private canoe launch areas, two boat launches and five reported swimming locations on White River. A map illustrating the observed and reported uses is located in Appendix C.

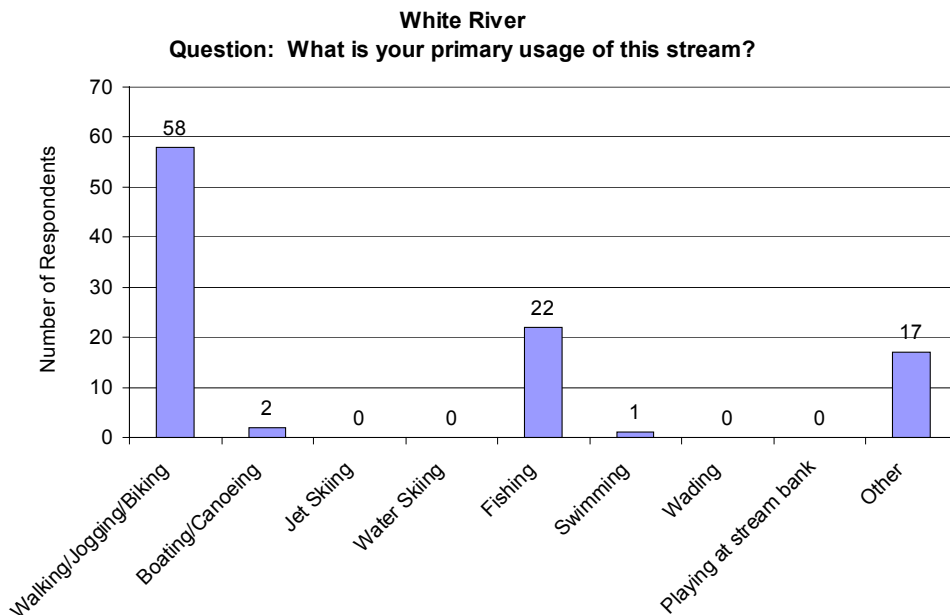
In October 2002, DPW sent written survey instruments to downstream county health departments, parks departments and government offices in Daviess, Greene, Johnson, Knox, Morgan, and Owen counties. Surveys also were sent to McCormick Creek State Park, as well as the Department of Natural Resources Headquarters in Districts 5-7. Nine completed surveys were returned and included in the city’s database.

Recreational uses on White River downstream of White River were reported predominantly along parks, public access points, and towns. Based upon the above data sources, the city identified 10 reported fishing locations, six reported playing-at-stream-bank locations, four reported wading locations, five reported canoe launch areas, five reported boat launches, two reported swimming locations, and one duck hunting location. Swimming also was reported near McCormick Creek State Park and at Bloomfield. However, the city knows of no public swimming beaches along the river within this area. Downstream from Bloomfield land use is primarily agricultural and fewer water contact recreational uses were reported to the city. A map illustrating the observed and reported uses downstream of Marion County is located in Appendix C.

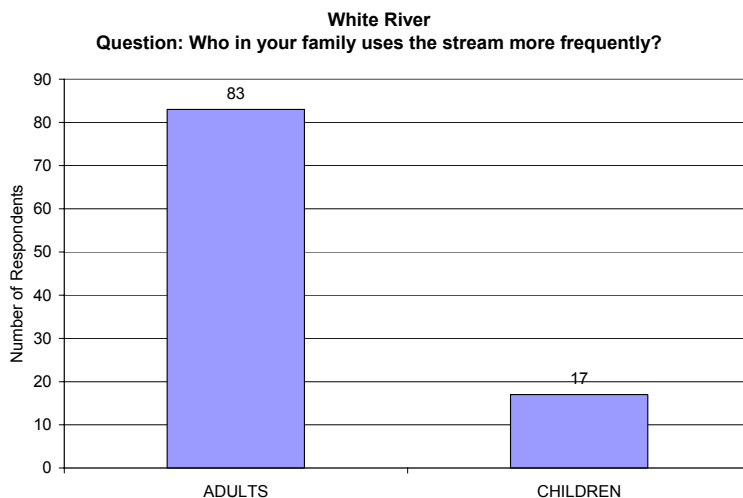
Extent of Uses: While some recreational activities do occur on White River within the CSO area, the number of people engaging in water contact activities and the frequency of those activities is limited. In the White River Use Survey, the primary recreational activity reported by people along White River in Marion County was walking/jogging/biking (58 of 100 people surveyed). Approximately 23 percent of respondents reported a primary use of fishing, swimming, wading or playing at stream bank, as shown in the graph below. For purposes of the survey, the following definitions were used:

White River

- **Swimming:** Full-body contact with the water, including a high potential for swallowing the water (water should be deep enough to permit actual swimming)
- **Wading:** Partial body contact with the water (usually water contact to lower legs and possibly hands and arms)
- **Playing at the Stream Bank:** Kneeling, squatting or sitting at stream bank (some water contact may occur when hands reach into the water to touch or pick up something)
- **Fishing:** Fishing at the stream bank or from a boat (water contact occurs through handling fish and tackle)



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Also according to the survey, adults are more likely than children to use White River for recreational activities.

White River

According to the survey and additional neighborhood meetings to confirm the survey's findings, swimming is observed or practiced much less frequently than activities that do not involve full-body contact. The full results of the White River Use Survey are located in Appendix D. Note that the survey results cannot be extrapolated to the city's general population. The survey was designed to identify people most likely to use the waterways and was not conducted using random sampling. Nor is the sample size large enough to warrant extrapolation of the results to the general population.

Frequency of Use: In a typical year, 36 percent of the respondents reported participating in recreational activities along White River in Marion County every week and 27 percent reported less than once a month. These activities include both water-contact and non-water-contact activities.

Summary: The city used a variety of data sources and public participation methods to gather information on the extent and frequency of water recreation activities in and along White River. Based upon this information, the city identified a number of locations where recreational uses occur along White River in Marion County and downstream in CSO-impacted areas. The primary use of this waterway for 58 percent of respondents is walking, jogging and/or biking along the greenways adjoining the stream. Swimming, wading and other water-contact activities are reported much less frequently. There are no public or private bathing beaches within the CSO-impacted areas of White River.

4. Limited extent of recreational use during or immediately after a significant wet weather event.

Little evidence exists of full-body or partial-body contact recreational uses of CSO-impacted portions of White River, especially after significant wet weather events. Where there is evidence of use, it is very infrequent. Most respondents to the White River Use Survey indicated that recreational usage within 24 hours after a rainfall is observed infrequently or not at all. Fifty-eight percent said that, based on their experience, they have seen adults or children playing in the stream when the current is slow, compared to 29 percent who have seen children or adults playing in the stream when the current is fast. Sixty-four percent of the interviewees also reported that use is infrequent (only once or twice a month) within 24 hours after a rainfall. Twenty-seven percent of respondents reported observing children or adults playing in the stream during or within 24 hours after a rainfall. The survey did not characterize the size of the rainfall events after which recreation was observed. Based on the answer to the question about fast or slow currents, people are more likely to recreate during dry weather or after a light rain than a major storm. The evidence collected by the city indicates that recreational use is rare or non-existent during and after large storm events.

5. Unsafe water quality combined with municipal programs that prevent and control access to the water.

IDEM guidance notes that unsafe water quality and municipal programs to prevent and control access may be a factor in determining an existing use:

If the water quality is unsafe and access to the water is precluded by (a) existing impediments to physical access such as steep banks, fencing or high retaining walls, then IDEM will not presume an existing recreational use. In order for IDEM to determine that access is precluded by the municipality, the municipality must take steps to actively prevent adults and children from actually using the water. This requires the municipality

White River

to prevent and control access to the water and to conduct a reasonable proactive outreach media and educational program to prevent actual use during and immediately following a significant wet weather event. This presumption will not apply to recreational beaches open to the public and other swimming areas designated for public recreation. (IDEM guidance, p. 51.)

Information on the city's programs to prevent and control access to CSO-impacted waterways is presented in the introduction section to this submittal. Information documenting unsafe water quality on White River is presented below.

Water Quality: To demonstrate there is no existing recreational use under this factor, the city should demonstrate that recreational water quality standards are not achieved within the CSO-impacted area of White River during storm events. The table below provides a summary of in-stream water quality data collected in the CSO area of White River from 2000-2002 by the Indianapolis Office of Environmental Services and the Marion County Health Department. Results are shown for all data, dry weather data only and wet weather data. The data show that during wet weather, the geometric mean within the CSO area in White River was 561 *E. coli* colonies/100 mL, exceeding the state's recreational use standard of 125 cfu/100 mL. Two-thirds of samples taken in wet weather periods exceed the single sample standard of 235 cfu/100 mL.

White River *E. coli* Bacteria Compliance (CSO Area)

Data Source	Geometric Mean of 2000-2002 data ¹	% of Samples > 235 cfu/100 mL	Total Number of Samples
All Data	238	46.2%	84
Dry Weather Data	99	25.3%	91
Wet Weather Data	561	66.7%	93

⁽¹⁾ Indiana's standard for geometric mean is 125 cfu/100 mL.

To determine whether water quality standards are being met in the CSO area of White River during or after large storm events, the city further analyzed in-stream water quality data collected in 2000-2002. Based upon a NetStorm simulation of LTCP Systemwide Control Plan 1, the city identified 17 storm events that would have resulted in untreated overflows if the city had installed CSO control facilities that achieve 93 percent capture. The city does not have data to correlate to all 17 storm events, since the city's existing sampling program is designed to collect data on a periodic basis without regard to weather conditions. However, on the days when existing 2000-2002 data could be correlated to an estimated overflow event, the data consistently show that the single sample maximum standard of 235 *E. coli* colonies/100 mL is not being met. This demonstrates that the CSO area of White River is unsafe for recreational use during and after those storm events. These types of storm events would have caused overflow events both before and after November 28, 1975, the date after which an existing use must be protected if it has been "attained."

White River

WHITE RIVER COMPARISON OF ESTIMATED OVERFLOW EVENTS AND HISTORICAL <i>E. COLI</i> BACTERIA SAMPLING 2000-2002							
Estimated Overflow Event Date (93% Capture)	Date of Sample	30th St OES (cfu/100 mL)	Morris St OES (cfu/100 mL)	Harding St OES (cfu/100 mL)	Raymond (cfu/100 mL)	New York (cfu/100 mL)	Average (cfu/100 mL)
4/7/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/26/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/4/00	7/5/00	980	20,000	9,909	N/A	N/A	10,300
8/17/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/10/00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/4/00	10/4/00	400	1,803	380	N/A	N/A	900
4/10/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/5/01	6/5/01	N/A	N/A	N/A	N/A	410	N/A
7/1/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/10/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/24/01	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/24/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/7/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/12/02	5/13/02	N/A	N/A	N/A	N/A	10,462	N/A
9/20/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/10/02	N/A	N/A	N/A	N/A	N/A	N/A	N/A

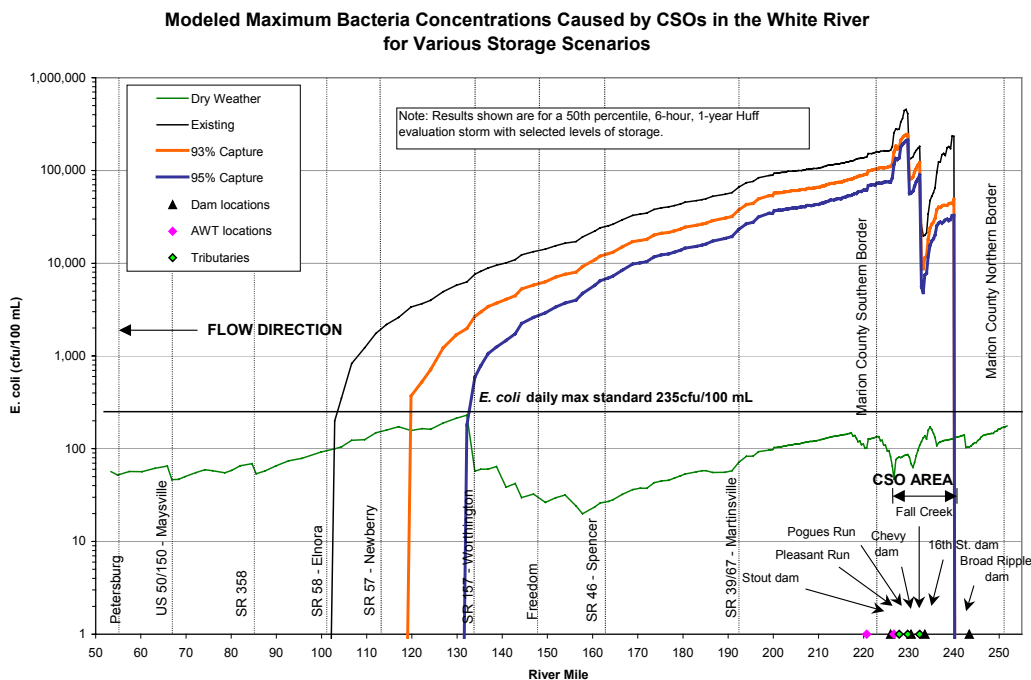
Source: Estimated Overflow Dates: 1950-2003 NetSTORM Simulation for System Wide Plan 1, 93% Capture Level of Control.

Sampling Data: 2000 - 2002 instream *E. coli* bacteria sampling by OES and MCHD.

Note: Sampling data is presented only for dates on or following the estimated overflow event date, and for locations within the CSO area.

Downstream Water Quality: The figure below shows modeled maximum *E. coli* bacteria concentrations in White River downstream of Indianapolis, based upon existing conditions in dry weather and a 1-year storm. The figure also shows conditions resulting from a 1-year storm under CSO control levels of both 93 and 95 percent capture. The modeled analysis demonstrates that the single sample maximum standard is not met as far downstream as State Road 58 near Elnora following a 1-year storm under current conditions. The extent of downstream impacts is expected to decrease during and following implementation of the city's final long-term control plan. The 93 and 95 percent capture scenarios are presented as potential outcomes of the LTCP. However, the final long-term control plan is subject to public input, affordability and negotiation with IDEM and EPA. Nevertheless, the information below is sufficient to demonstrate that recreational water quality standards are not being met in downstream reaches of White River. Combined with the city's public notification programs to downstream communities, this factor supports a "no existing use" determination for White River during storm events exceeding the 1.7-month storm as far downstream as State Road 58.

White River



Summary

Although occasional recreational uses occur along the CSO-impacted areas of White River, these should not be considered existing uses under 40 CFR 131.3(e) based upon the following factors:

1. Physical access and flow that are unsuitable for recreational use during large storm events, such as those exceeding a 1.7-month storm;
2. Waters that are dangerous during large storm events due to swift currents and undertows
3. Limited extent and frequency of actual recreational uses
4. Minimal recreational use during or immediately after significant wet weather events;
5. Unsafe water quality combined with extensive municipal programs to prevent and control access to the water following wet weather events.

Furthermore, the physical and water quality conditions of CSO-impacted areas of White River make primary and secondary contact recreational activities unsuitable, undesirable, and unsafe during significant wet weather events. Based upon this data, we conclude that full-body or partial-body contact recreation is not an existing use of CSO-impacted areas of White River during storm events exceeding the 1.7-month storm. Therefore, we request that IDEM affirm the city's conclusion and allow the city to proceed with a UAA to evaluate the attainable uses of the CSO area of White River during the periods and conditions under which we contemplate having residual overflows.

Appendices:

- A. Physical Stream Survey Maps and Tables
- B. USGS flow graph
- C. White River Recreational Use Map
- D. 2002 White River Use Survey

Reference:

White River

U.S. Geological Survey, 1996. Low-Flow Characteristics of Indiana Streams. USGS Water Resources Investigation Report 96-4128. Page 129.

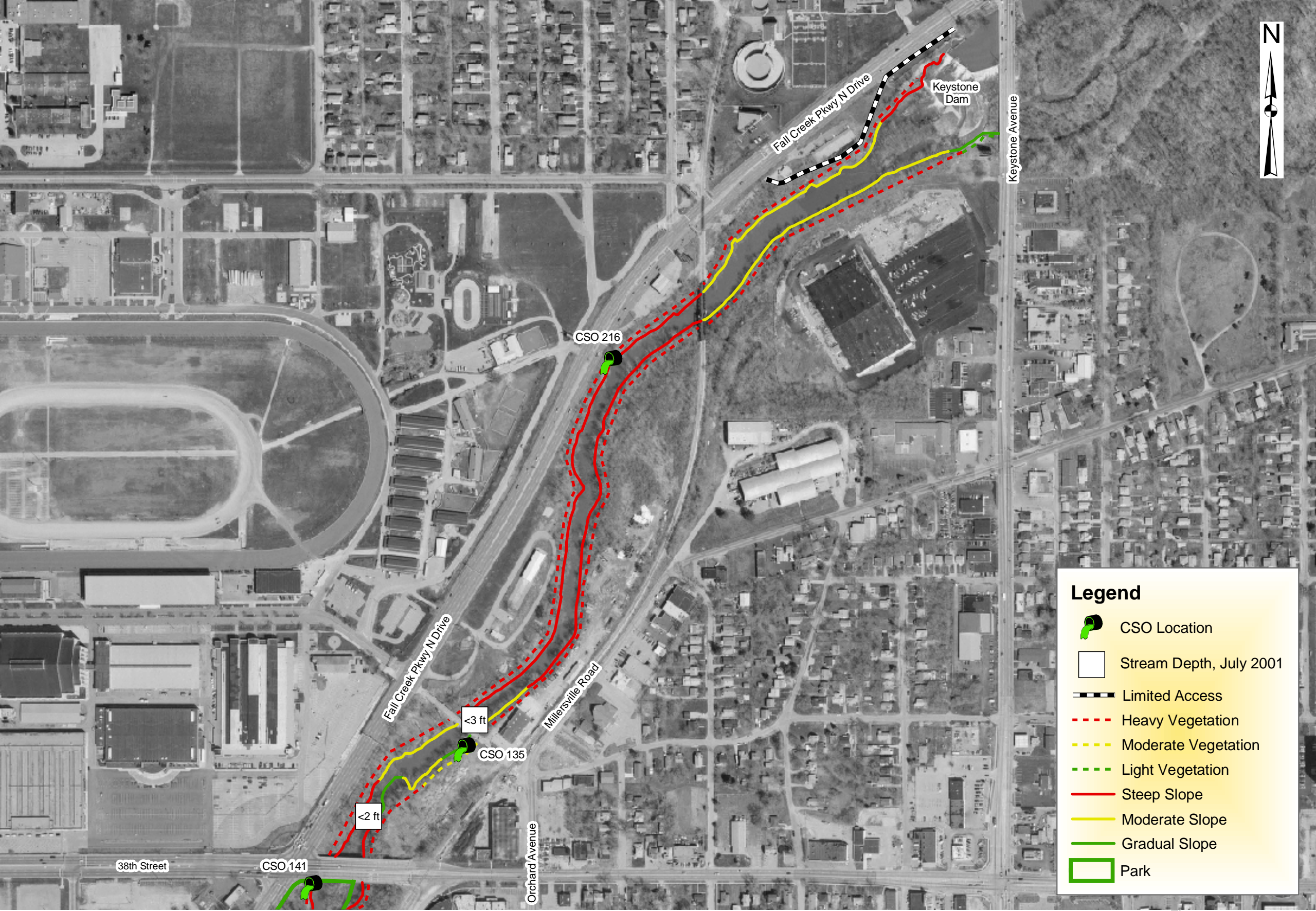


Figure 2-5a
Physical Stream Characteristics
Fall Creek
Sheet 1 of 7

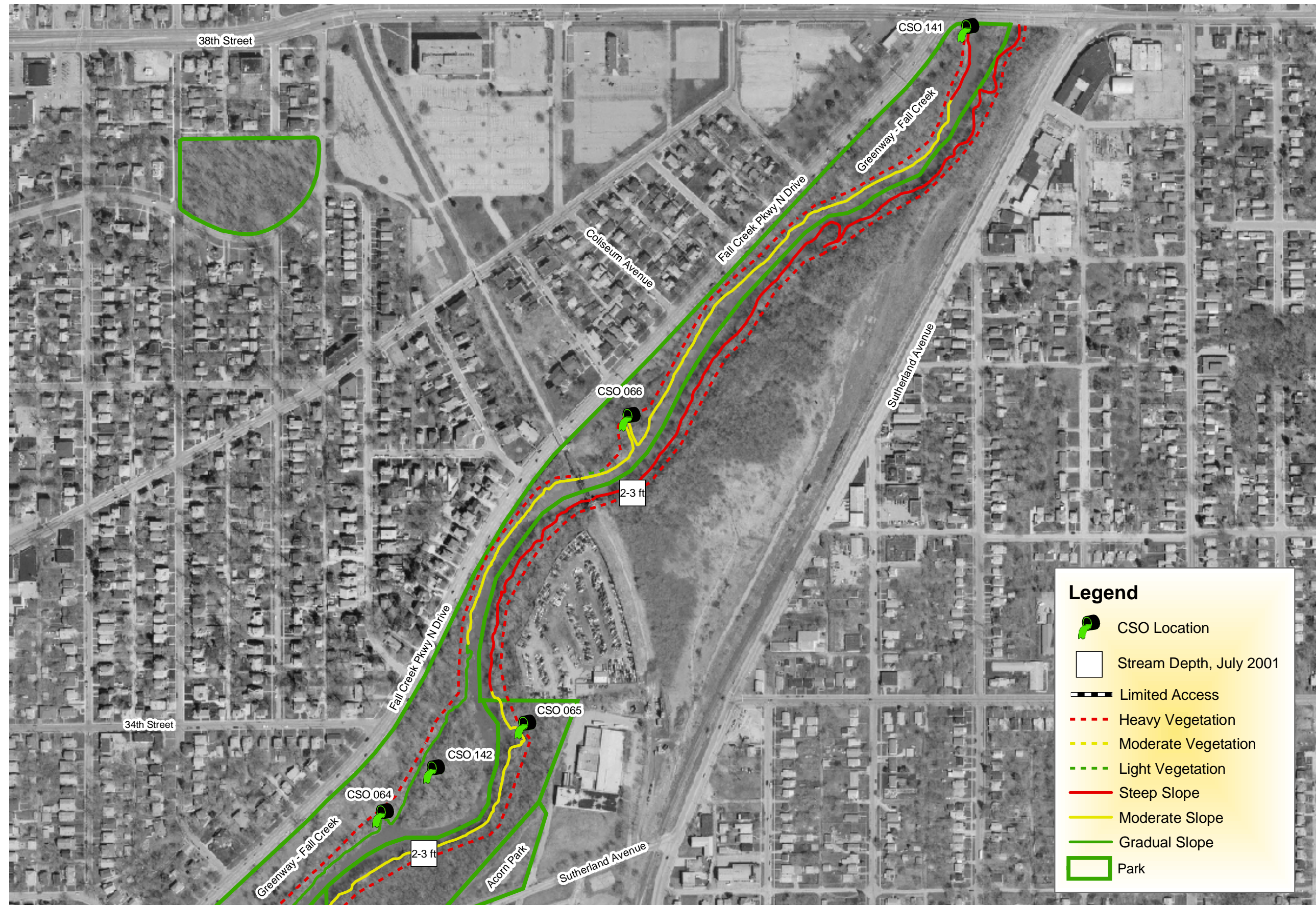


Figure 2-5b
Physical Stream Characteristics
Fall Creek
Sheet 2 of 7



Figure 2-5c
Physical Stream Characteristics
Fall Creek
Sheet 3 of 7

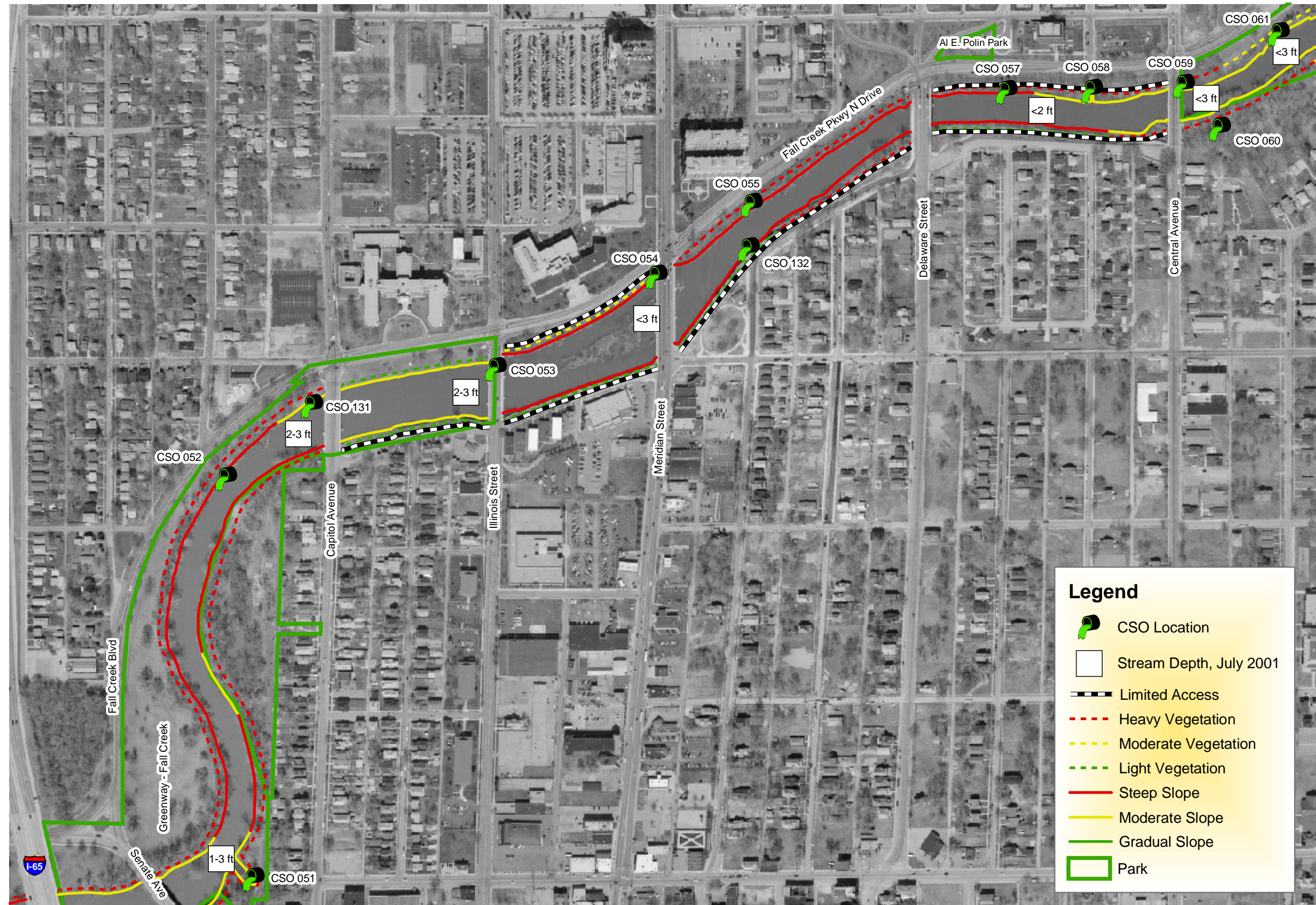


Figure 2-5d
Physical Stream Characteristics
Fall Creek
Sheet 4 of 7

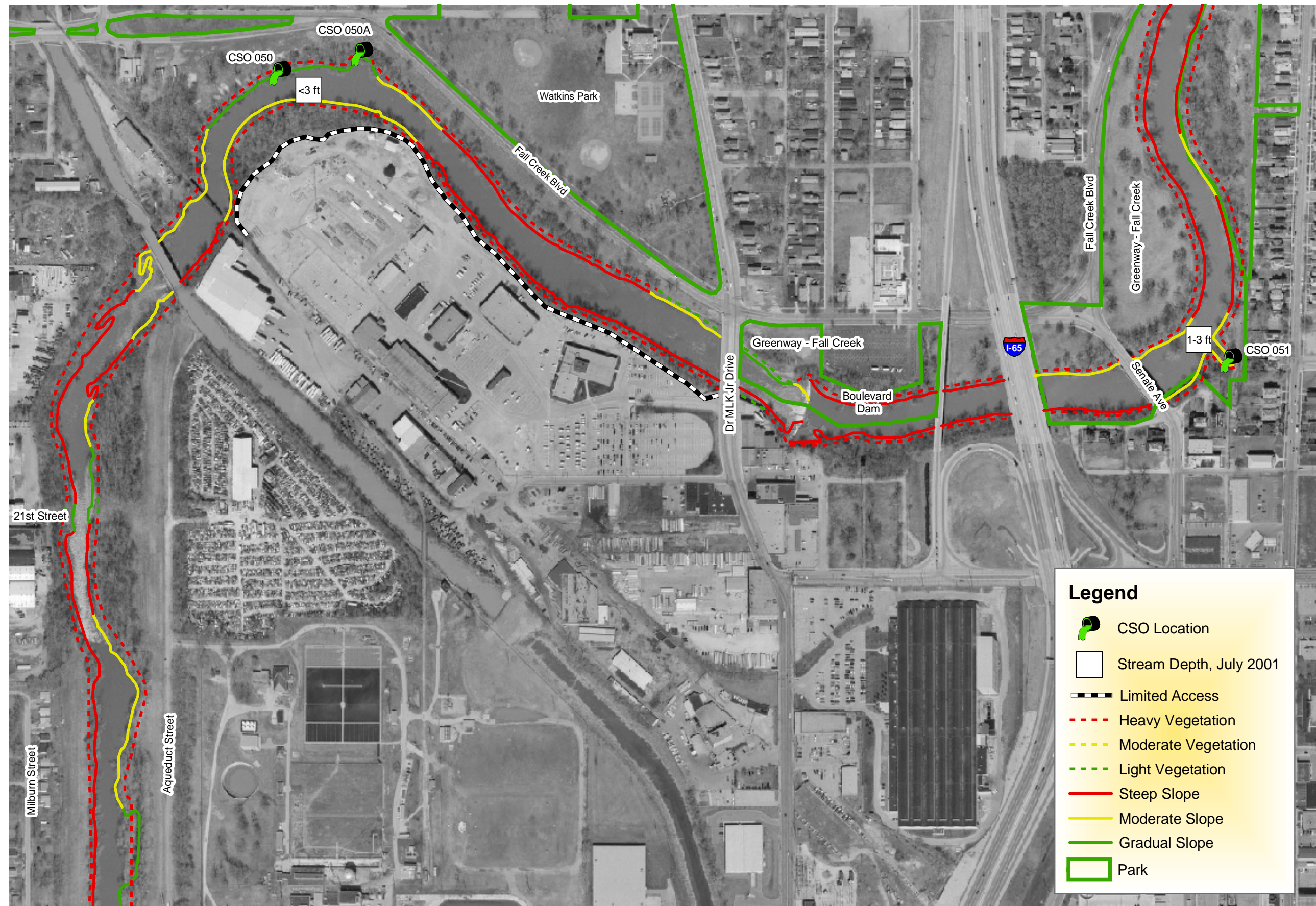


Figure 2-5e
Physical Stream Characteristics
Fall Creek
Sheet 5 of 7

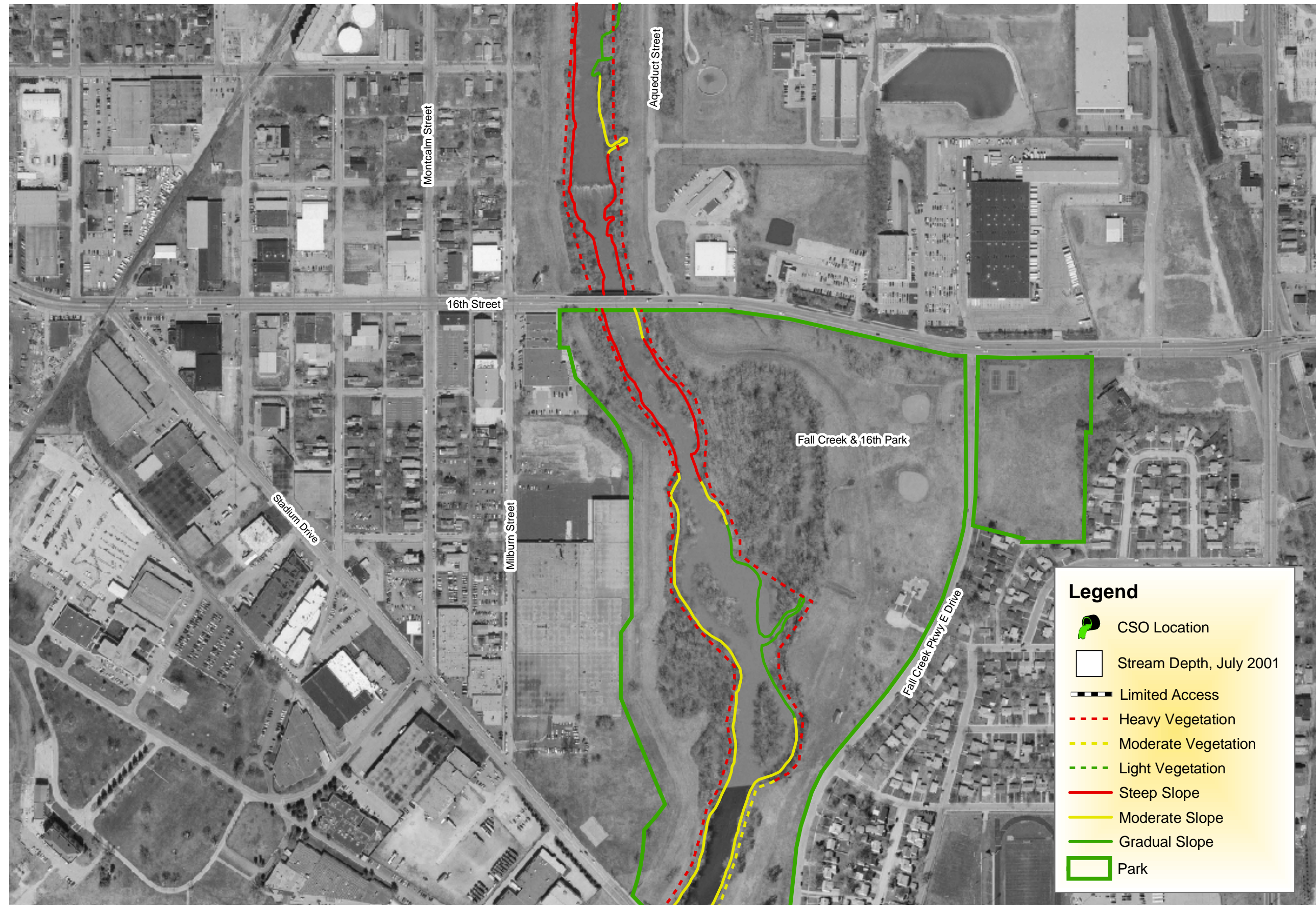


Figure 2-5f
Physical Stream Characteristics
Fall Creek
Sheet 6 of 7

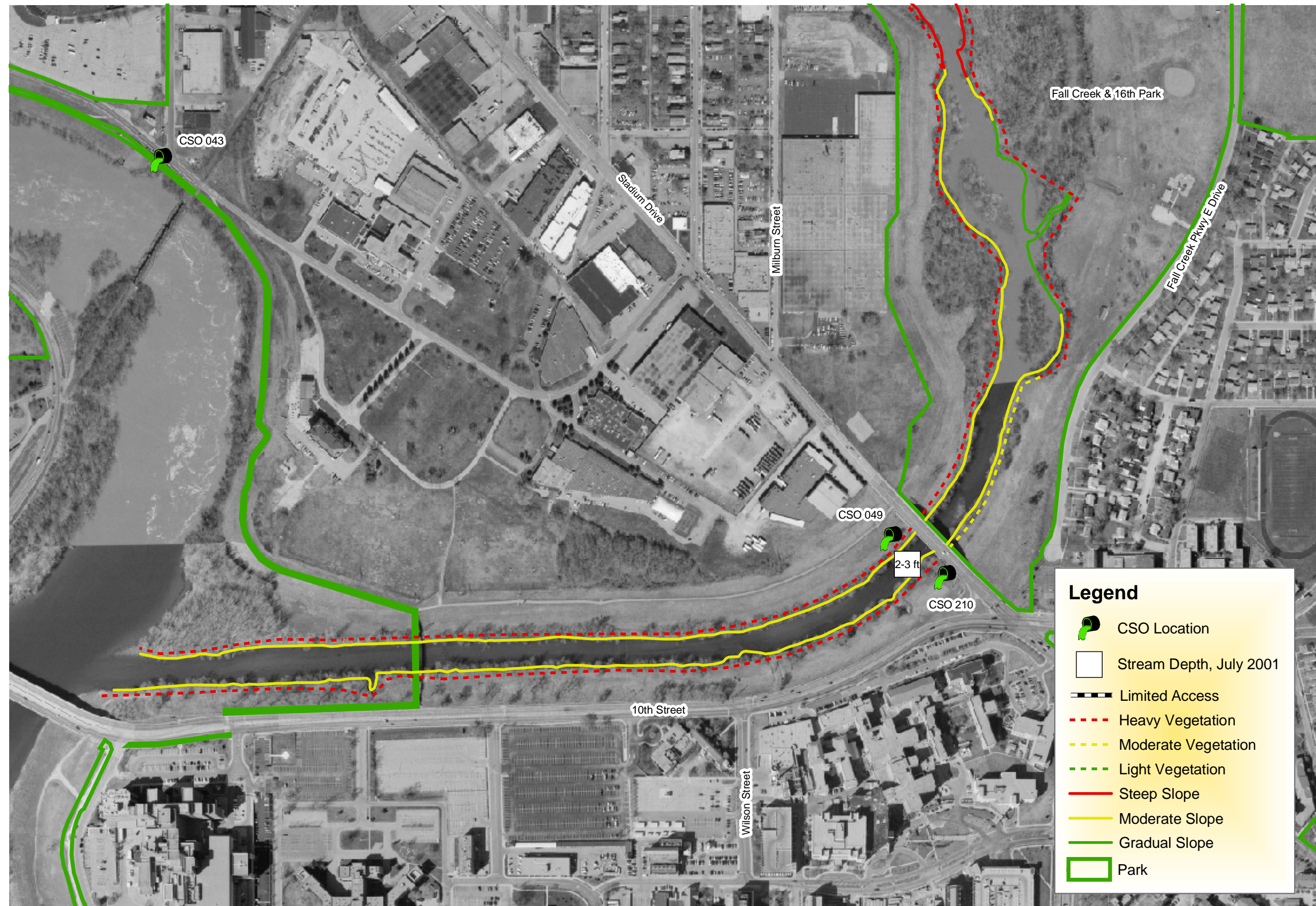


Figure 2-5g
Physical Stream Characteristics
Fall Creek
Sheet 7 of 7

INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Description of Marion County Streams

Fall Creek

Criteria	103 ³	216	135	141	066	065 ³	142	064	063	63A	062	213 ³	061
	3900 N. Sherman	Crittenden Ave. and 42nd St.	Orchard Ave. and 39th St.	College Ave. and 38th St.	Fall Creek Blvd. and Balsam Ave.	Sutherland Ave. and 34th St.	College Ave. and 38th St.	Winthrop Ave. and 34th St.	FCPND and 32nd St.	FCPND and 32nd St.	Guilford Ave. and 30th St.	Hillside Ave. and 29th St.	FCPND and Ruckle St.
Overflows per year (average) ¹	9	44	38	14	42	33	29	36	52	52	22	3	84
Annual Overflow Volume Range (MG/year) ¹	5-6	45-61	77-104	37-49	26-35	110-148	36-49	5-7	151-204	14-19	119-161	<1	254-344
Other Discharges													
Location													
Type													
Factors that support/encourage recreational use													
School	no	no	no	no	no	no	no	no	no	no	no	no	no
Park	no	State Fairgrounds	State Fairgrounds	no	no	no	no	no	no	no	no	no	no
Trail	no	no	no	no	no	no	no	no	no	no	no	no	no
Other							open grassy area	open grassy area					
Factors that prohibit/discourage recreational use													
Warning Signs/City Ordinance ²	yes	could not locate	yes	yes	yes, deep in woods	could not locate	yes	yes	yes	yes	could not locate	could not locate	could not locate
Fence	no	no	no	no	yes	yes	no	no	no	no	no	no	no
Steep Banks	no	yes	no	yes	gradual	yes	no	no	gradual	gradual	gradual on west side	gradual on west side	gradual
Other		dense woods	no	dense vegetation	dense vegetation	dense vegetation	dense vegetation	dense vegetation	dense vegetation	dense vegetation	dense vegetation on west side, wall on east side	dense vegetation on west side, wall on east side	
Access													
North Bank	Easy	Extremely Difficult	Extremely Difficult	Moderately Difficult	Moderately Difficult	Extremely Difficult			Extremely Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult	Extremely Difficult
South Bank	Easy	Extremely Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult			Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult
Stream's Physical Attributes													
Depth	~ 6 in.		~ 3 ft.	~ 2 ft.	~2-3 ft.	> 7 ft.	~2-3 ft.	~2-3 ft.	~2-3 ft.	~2-3 ft.	3 ft.	variable	3 ft.
Velocity	slow	could not see creek	slow	slow	slow	quick	slow	slow	slow	slow	slow	moderate	slow
Width	5 ft.		50 ft.	50 ft.	50 - 60 ft.	65 ft.	50 - 80 ft.	50 - 80 ft.	50 ft.	50 ft.	60 ft.	50 ft.	40 - 50 ft.
Substrate	rocky		could not distinguish	could not distinguish	could not distinguish	sandy	could not distinguish	could not distinguish	rocky by creek banks	rocky by creek banks	rocky	sandy	rocks by banks
Safety	OK		no	no	no	no	no	no	no	no	no	no	no
Land Use													
Public	no	yes	yes	yes	no	no	no	no	no	no	yes	yes	no
Residential/Wooded	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industrial/Commercial	no	no	no	no	no	no	no	no	no	no	no	no	no
Stream Use													
Habitat for Aquatic Species													
Natural riparian		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes, on west side		yes
Partially Developed (Subdivision)	yes										yes		
Fully Urbanized Development												yes	
Other Comments						Access extremely difficult, dense vegetation, steep slopes, restricted access			Dangerous crossing Fall Creek Pkwy. to get to CSO, guard rail is very close to road.				

Notes:

1. Overflows per year and volume range were revised June 2004.
2. New bilingual warning signs are being placed at all CSO locations.
3. The data for this CSO was collected in June 2004.
4. Pictures not taken by CSO, additional river pictures.

INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Description of Marion County Streams

Fall Creek

Criteria	059	060	058	057	055	132	054	053	131	052	051	⁴	50A ³
	FCPND and Central Ave.	Sutherland Ave. and Central Ave.	28th St. and New Jersey St.	28th St. and Washington Blvd.	28th St. and Talbot St.	FCPND and Pennsylvania St.	FCPND and Meridian St.	FCPND and Illinois St.	Fall Creek Blvd. and Capitol Ave.	Fall Creek Blvd. And Boulevard Pl.	Capitol Ave. and 22nd St.	Indianapolis Ave. and Fall Creek	Northwestern Ave. and 24th St.
Overflows per year (average) ¹	8	33	28	1	21	23	4	5	21	43	40		38
Annual Overflow Volume Range (MG/year) ¹	1-2	15-20	2-3	<1	1-1	4-6	1-2	2-3	4-5	41-55	251-339		56-76
Other Discharges													
Location													
Type													
Factors that support/encourage recreational use													
School	no	no	no	yes, child care center	no	no	yes, Ivy Tech	no	no	no	no	no	no
Park	no	no	no	no	no	no	no	open grassy area	no	no	no	no	yes
Trail	no	no	no	along south side	no	no	no	no	no	no	no	no	no
Other										church	alley	dam	
Factors that prohibit/discourage recreational use													
Warning Signs/City Ordinance ²	could not locate	could not locate	yes	could not locate	yes	yes	yes	yes	yes	yes	yes	N/A	yes
Fence	no	no	no	no	guard rail	guard rail	no	no	no	no	no	no	no
Steep Banks	gradual	gradual	wall on south side	wall on north side	yes	yes	walls	gradual	no	yes	gradual	gradual	no
Other	dense vegetation on east side	dense vegetation on east side	vegetation on north side	heavily wooded	dense vegetation	dense vegetation	dense vegetation	dense vegetation of NW and SW sides, wall on NE and SE sides	vegetation on SW side	dense vegetation	big rocks		below water level
Access													
North Bank	Extremely Difficult	Extremely Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Easy	Easy	Extremely Difficult	Extremely Difficult	Moderately Difficult	Easy
South Bank	Extremely Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Easy	Moderately Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Easy
Stream's Physical Attributes													
Depth	3 ft.	3 ft.	~ 2 ft.	~ 2 ft.	could not	could not	3 ft.	2 - 3 ft.	2 - 3 ft.	could not	1 - 3 ft.	1 - 3 ft.	> 10 ft.
Velocity	slow	slow	slow	slow	see creek	see creek	slow	slow	slow	see creek	slow	1 -2 fps (higher velocity because of dam)	moderate
Width	50 -60 ft.	50 -60 ft.	50 ft.	50 ft.			creek is split, 25 ft. on each side	100 ft.	100 ft.		80 - 100 ft.	80 - 100 ft.	60 ft.
Substrate	rocky	rocky	very muddy by bank	very muddy by bank			could not distinguish	could not distinguish	could not distinguish		sand and rocks	sand and rocks	sandy
Safety	no	no	no	no			no	no	no		no	no	no
Land Use													
Public	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Residential/Wooded	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industrial/Commercial	no	no	no	no	no	no	no	no	no	no	no	no	no
Stream Use													
Habitat for Aquatic Species													
Natural riparian	yes	yes	yes	yes				yes	yes		yes	yes	
Partially Developed (Subdivision)													
Fully Urbanized Development			yes on south side	yes on north side			yes	yes (on NE and SE sides)					yes
Other Comments													

Notes:
1. Overflows per year and volume range were revised June 2004.
2. New bilingual warning signs are being placed at all CSO locations.
3. The data for this CSO was collected in June 2004.
4. Pictures not taken by CSO, additional river pictures.

Use Attainability Analysis

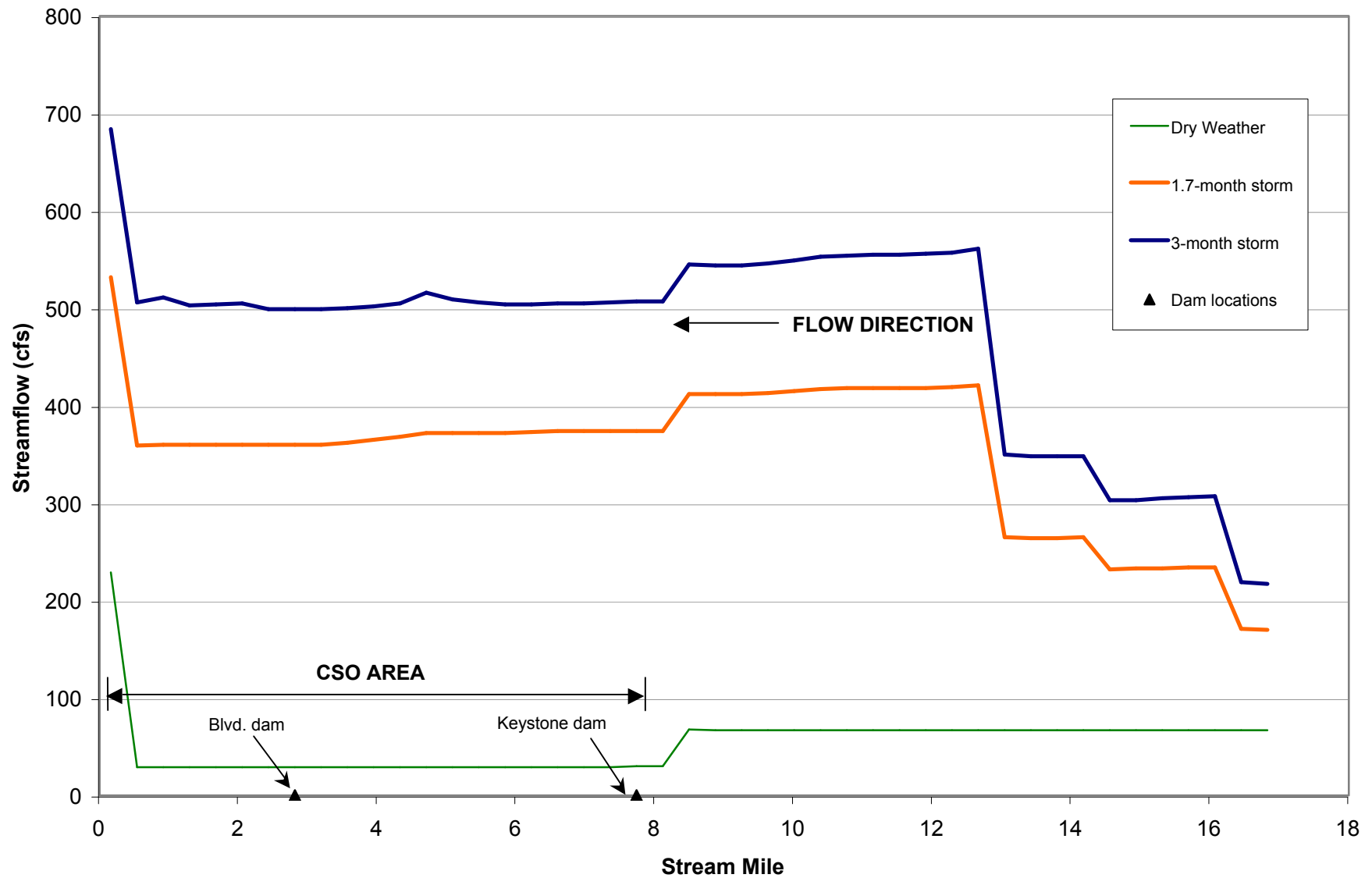
Description of Marion County Streams

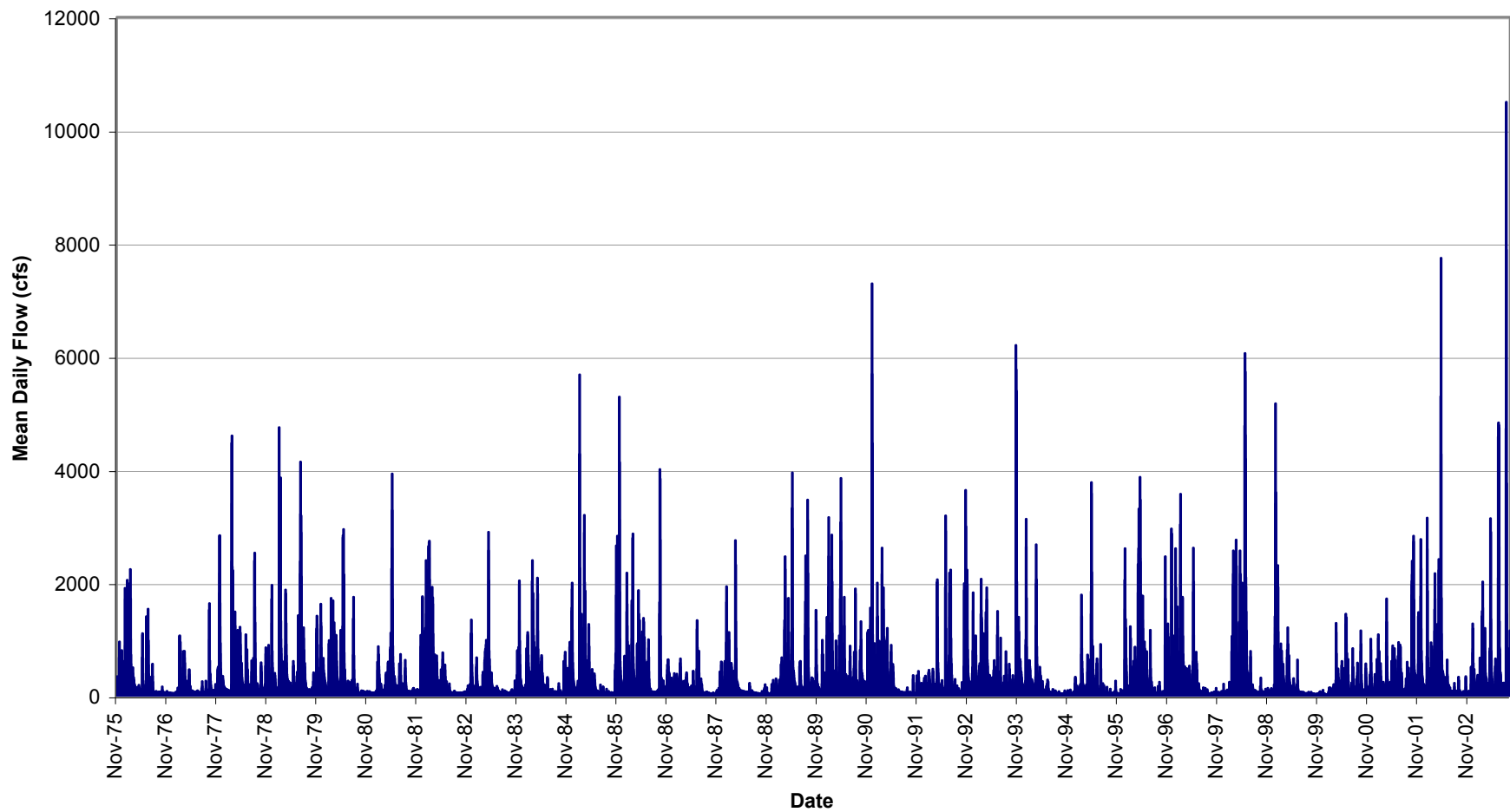
Fall Creek

Criteria	050	4	4	049	210
	Fall Creek Blvd. and Burdsal Pkwy.	Montcalm St. and 21st St.	16th St. and Aqueduct St.	Stadium Dr. and Fall Creek	Indiana Ave. and 10th St.
Overflows per year (average) ¹	42			18	54
Annual Overflow Volume Range (MG/year) ¹	103-140			2-2	66-89
Other Discharges					
Location					
Type					
Factors that support/encourage recreational use					
School	no	no	no	no	no
Park	yes	no	no	no	no
Trail	no	no	no	Fall Creek greenways	Fall Creek greenways
Other					
Factors that prohibit/discourage recreational use					
Warning Signs/City Ordinance ²	could not locate	N/A	N/A	yes	yes
Fence	no	no	no	no	no
Steep Banks	no	no	gradual	gradual	gradual
Other	dense vegetation	vegetation	dense vegetation	vegetation	vegetation
Access					
North Bank	Moderately Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult
South Bank	Extremely Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult
Stream's Physical Attributes					
Depth	~ 3 ft.	1 - 3 ft.	1 - 3 ft.	~2-3 ft.	~2-3 ft.
Velocity	slow	slow	slow	slow	slow
Width	50 - 60 ft.	80 - 100 ft.	80 - 100 ft.	50 - 60 ft.	50 - 60 ft.
Substrate	sand and rocks	sand and rocks	sand and rocks	rocky banks	rocky banks
Safety	no	no	no	no	no
Land Use					
Public	yes	yes	no	yes	yes
Residential/Wooded	yes	yes	yes	no	no
Industrial/Commercial	no	no	no	yes	yes
Stream Use					
Habitat for Aquatic Species					
Natural riparian	yes	yes	yes	yes	yes
Partially Developed (Subdivision)					
Fully Urbanized Development					
Other Comments					CSO flows into pit, would take a lot of flow to reach creek.

Notes:
1. Overflows per year and volume range were revised June 2004.
2. New bilingual warning signs are being placed at all CSO locations.
3. The data for this CSO was collected in June 2004.
4. Pictures not taken by CSO, additional river pictures.

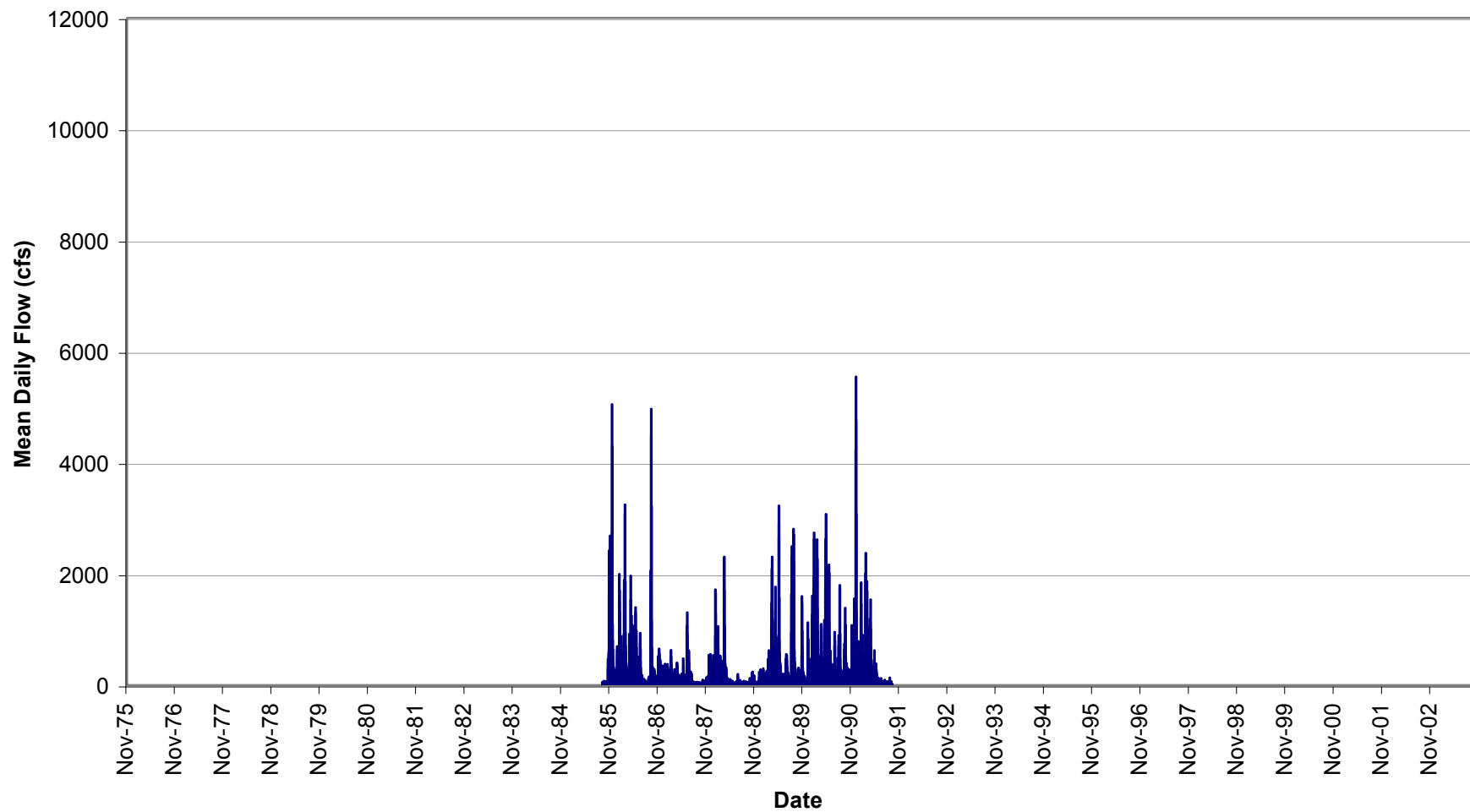
Modeled Maximum Streamflow in Fall Creek





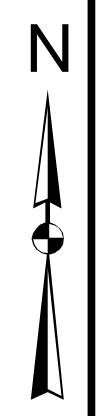
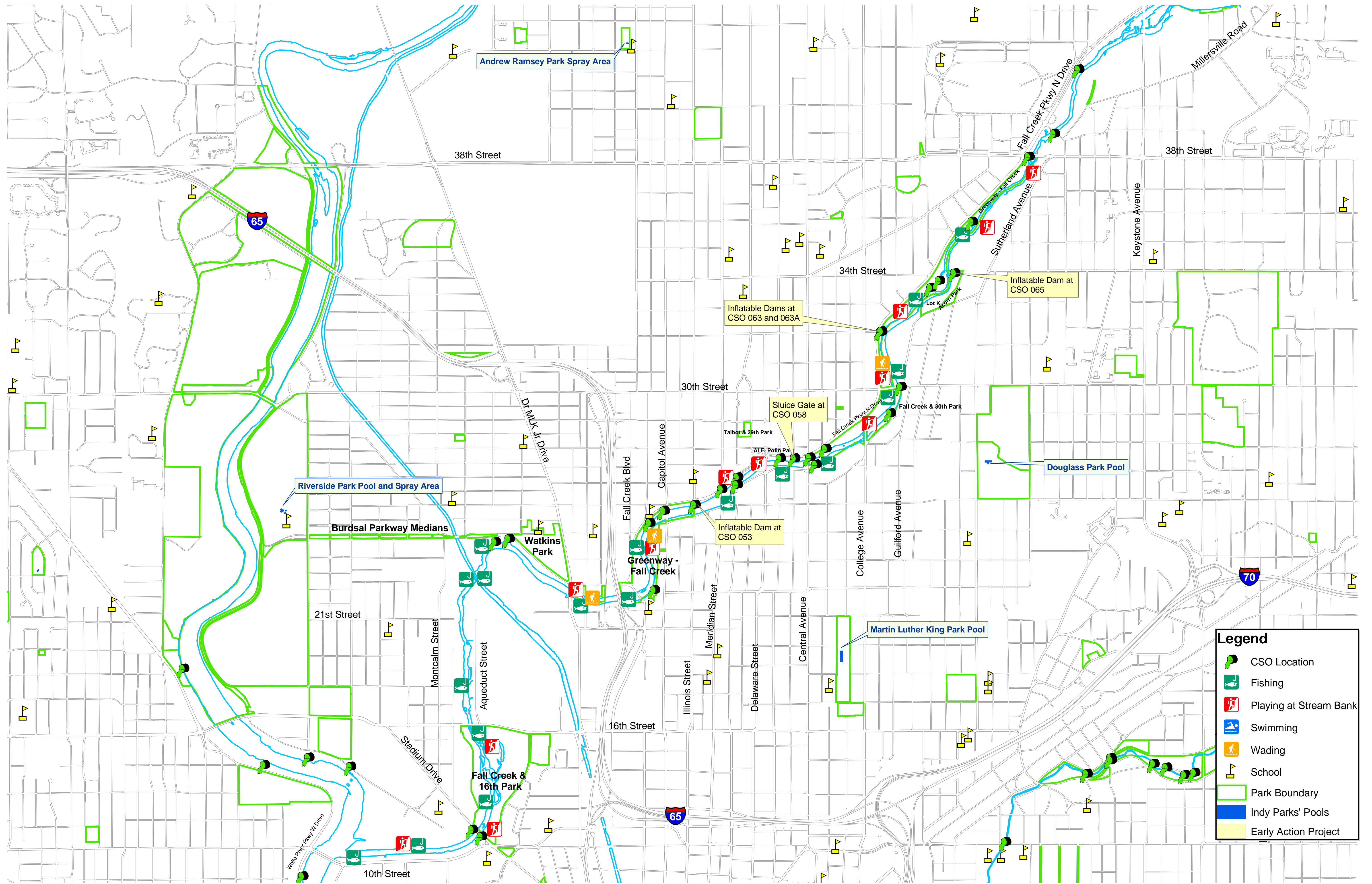
Source: USGS gauge station 03352500 in Fall Creek at Millersville,
November 28, 1975 to September 30, 2003.

Flow Variations in Fall Creek at Millersville Rd



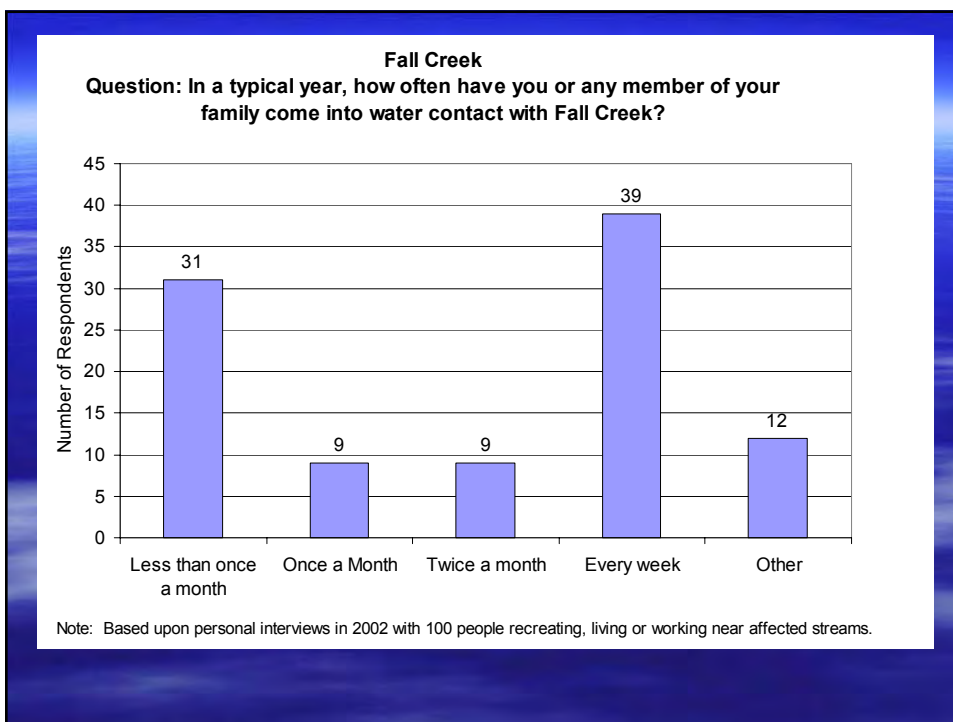
Source: USGS gauge station 03352875 in Fall Creek at 16th Street, October 1, 1985 to September 30, 1991. Data not available before October 1, 1985 and after September 30, 1991.

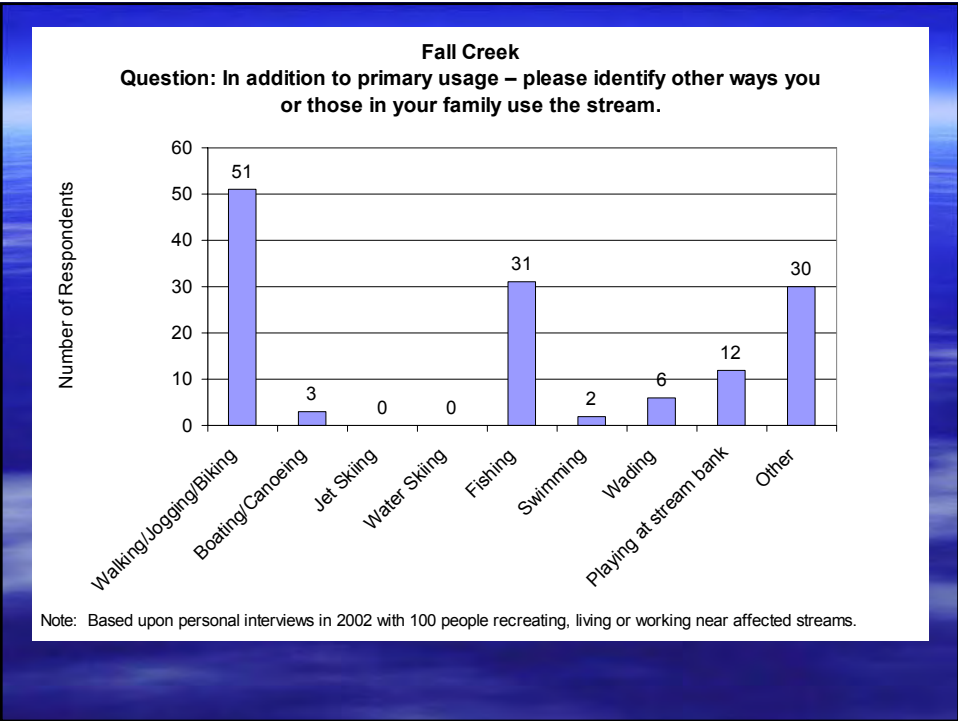
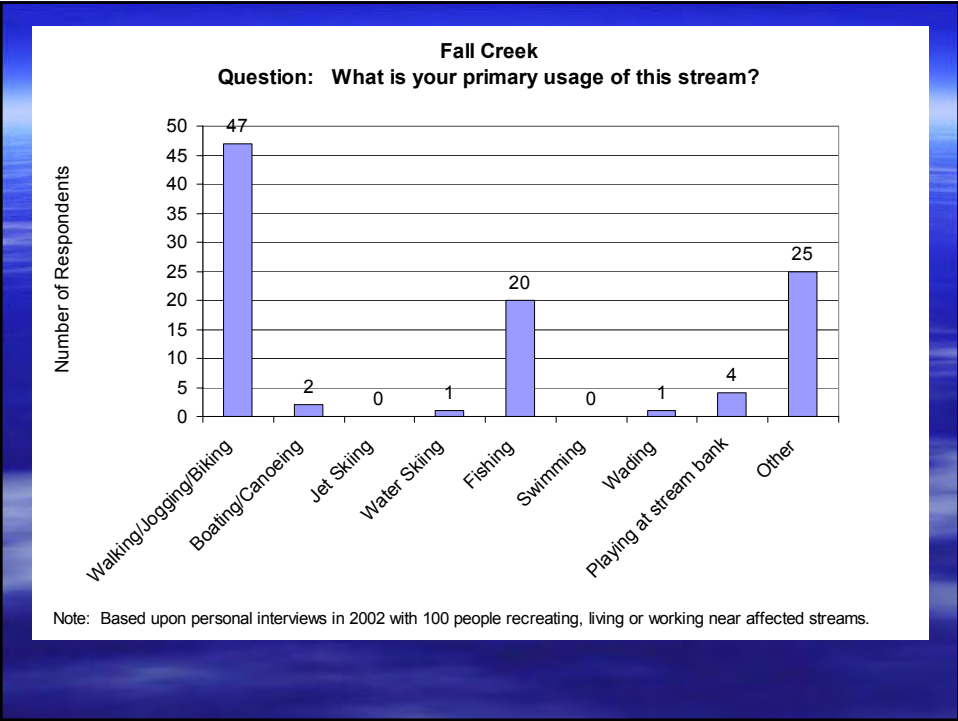
Flow Variations in Fall Creek at 16th Street



Note: Located upstream of this map, an early action project at CSO 103 will have sewer separation and rehabilitation.

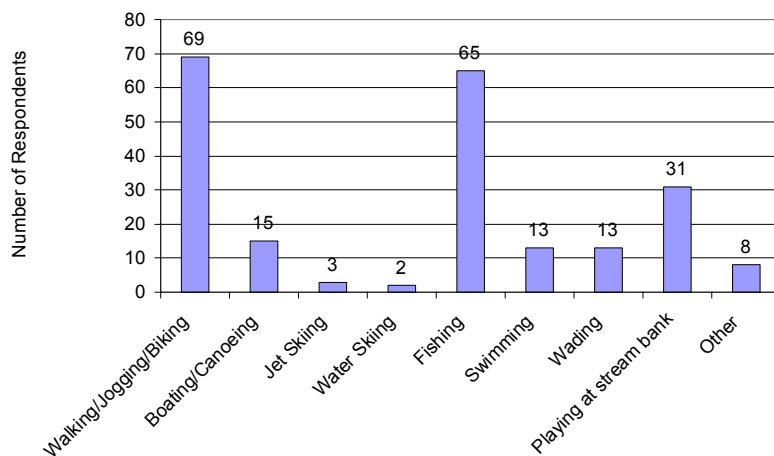
Fall Creek
Reported and Observed Uses





Fall Creek

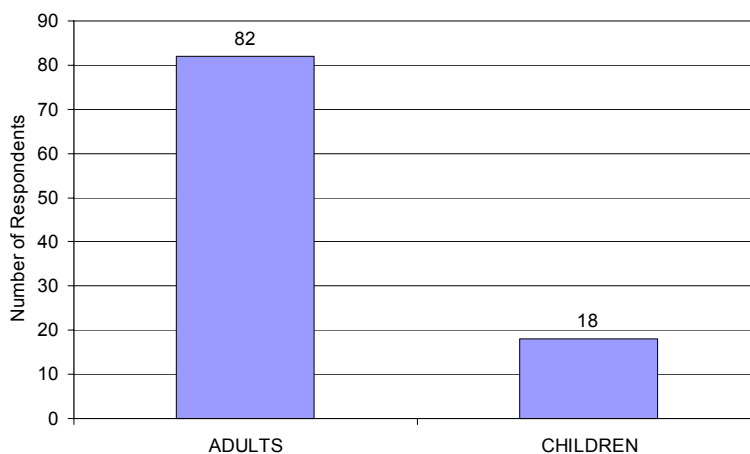
Question: Please identify the ways you have seen the stream used by others.



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Fall Creek

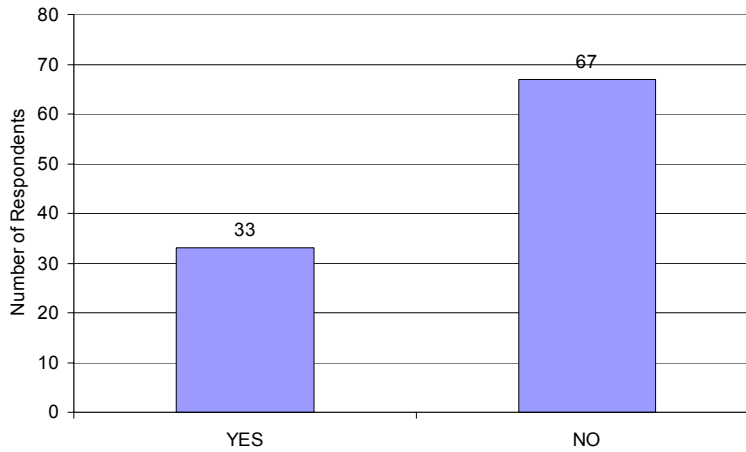
Question: Also, who in your family uses the stream most frequently?



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Fall Creek

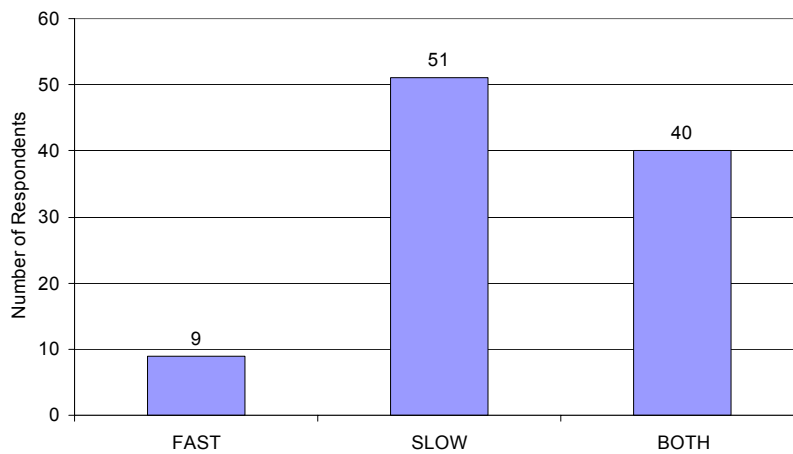
Question: Have you observed children or adults playing in the stream during or within 24 hours after a rainfall?



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Fall Creek

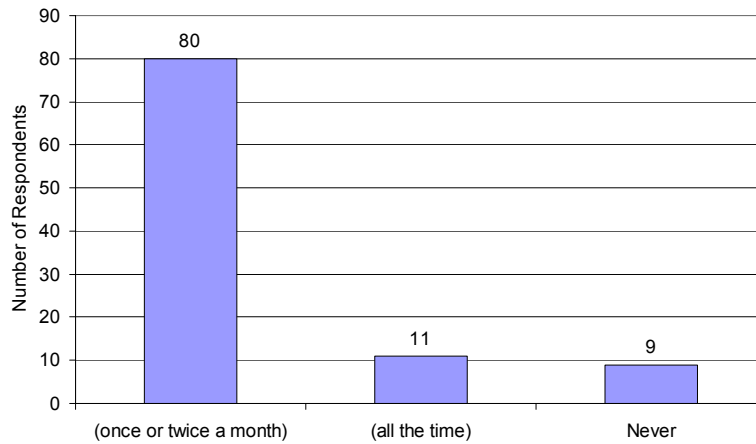
Question: Based on your experience, do you see children or adults playing in the stream when the current is fast or slow?



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Fall Creek

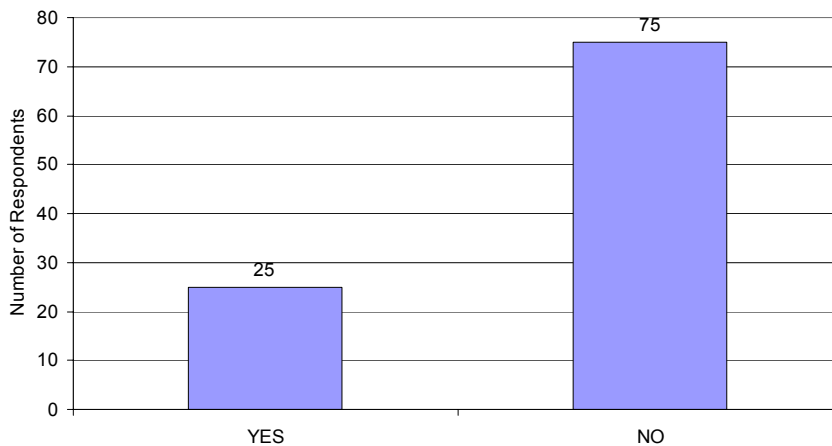
Question: How often would you say you have observed children or adults playing in the stream after a rainfall?



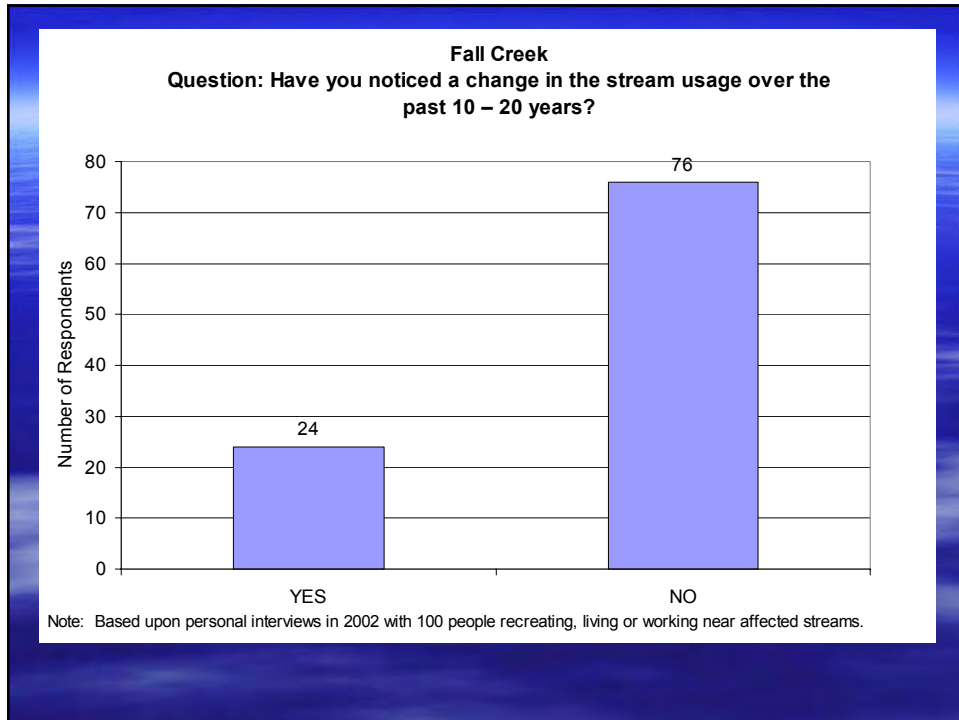
Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Fall Creek

Question: Are you aware that signs are posted along the streams warning people to stay away because of pollution from sewage?

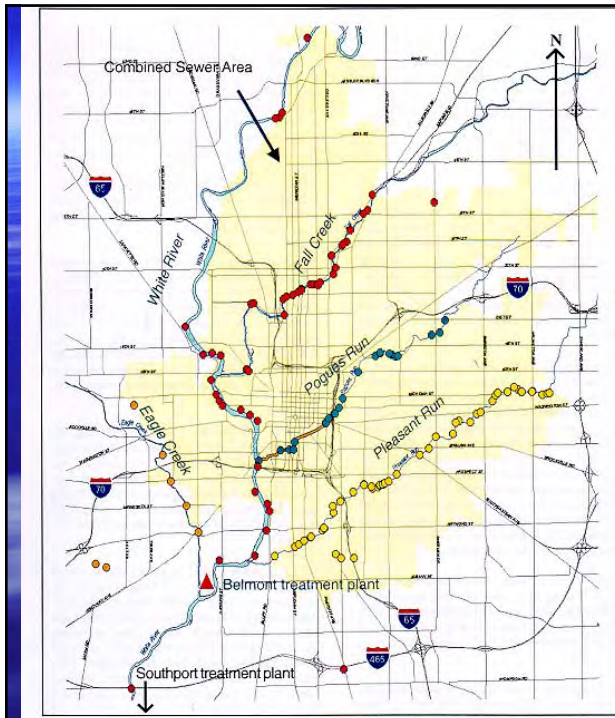


Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.



Location of Uses on Fall Creek

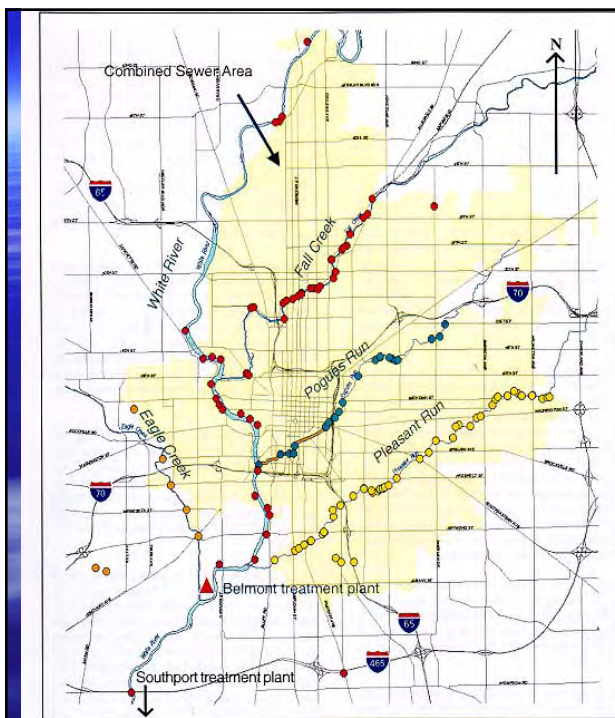
Activity	Location/Direct Respondent	Stream Survey	MCHD
Fishing	18 th & Milburn		X
Fishing/ PSB	30 th & Fall Creek	X	
Fishing/ PSB	South of 16 th Street	X	
Fishing	Fall Creek and Martin Luther King Jr. Street	X	
Fishing	Fall Creek & Alabama		X
PSB	Sutherland & Fall Creek		X
Fishing	Between 30 th & 38 th Street on Fall Creek		
Fishing	Central & Fall Creek		X
PSB	25 th & Fall Creek		X
Fishing	Burdsal Parkway and Montcalm	X	
Fishing	25 th & Meridian Street		X
PSB	College & Fall Creek		X
PSB	Fall Creek & Delaware		X
Fishing	30 th & Sutherland		X



FALL CREEK: Location Activity Direct Respondent

Clusters of activity: 16th St. & Milburn to 30th & Fall Creek.

1. Fishing from bridges that cross Fall Creek, College and Fall Creek, 25th and Meridian as well as accessible stream banks.
2. Playing at the stream bank is a highly observed behavior.
3. Adults attracted to fishing based on access as a sport. Historical acceptance.



FALL CREEK: Location Activity Direct Respondent

- | | |
|----------|--|
| Fish | *18 th & Milburn |
| Fish/PSB | † 30 th & Fall Creek |
| Fish/PSB | † South of 16 th Street |
| Fish | † Fall Creek and Martin Luther King Jr. Street |
| Fish | *Fall Creek & Alabama |
| PSB | *Sutherland & Fall Creek |
| Fish | Between 30 th & 38 th Street on Fall Creek |
| Fish | *Central & Fall Creek |
| PSB | *25 th & Fall Creek |
| Fish | † Burdsal Parkway and Montcalm |
| Fish | *25 th & Meridian Street |
| PSB | *College & Fall Creek |
| PSB | *Fall Creek & Delaware |
| Fish | *30 th & Sutherland, North side |

PSB=Playing at Stream Bank

† Reported on Stream Survey.

* Reported to MCHD.

FINAL Survey Results - Fall Creek

In a typical year, how often have you or any member of your family come into water contact with Fall Creek?

	Total Number	%
Less than once a month	31	31%
Once a Month	9	9%
Twice a month	9	9%
Every week	39	39%
Other	12	12%
TOTALS	100	100%

What is your primary usage of this stream?

	Total Number	%
Walking/Jogging/Biking	47	47%
Boating/Canoeing	2	2%
Jet Skiing	0	0%
Water Skiing	1	1%
Fishing	20	20%
Swimming	0	0%
Wading	1	1%
Playing at stream bank	4	4%
Other	25	25%
TOTALS	100	100%

In addition to primary usage – please identify other ways you or those in your family use the stream.

	Total Number	%
Walking/Jogging/Biking	51	38%
Boating/Canoeing	3	2%
Jet Skiing	0	0%
Water Skiing	0	0%
Fishing	31	23%
Swimming	2	1%
Wading	6	4%
Playing at stream bank	12	9%
Other	30	22%
TOTALS	135	100%

Please identify the ways you have seen the stream used by others.

	Total Number	%
Walking/Jogging/Biking	69	32%
Boating/Canoeing	15	7%
Jet Skiing	3	1%
Water Skiing	2	1%
Fishing	65	30%
Swimming	13	6%
Wading	13	6%
Playing at stream bank	31	14%
Other	8	4%
TOTALS	219	100%

Also, who in your family uses the stream most frequently?

	Total Number	%
ADULTS	82	82%
CHILDREN	18	18%
TOTAL	100	100%

Have you observed children or adults playing in the stream during or within 24 hours after a rainfall?

	Total Number	%
YES	33	33%
NO	67	67%
TOTAL	100	100%

Based on your experience, do you see children or adults playing in the stream when the current is fast or slow?

	Total Number	%
FAST	9	9%
SLOW	51	51%
BOTH	40	40%
TOTALS	100	100%

How often would you say you have observed children or adults playing in the stream after a rainfall?

	Total Number	%
(once or twice a month)	80	80%
(all the time)	11	11%
Never	9	9%
TOTALS	100	100%

Are you aware that signs are posted along the streams warning people to stay away because of pollution from sewage?

	Total Number	%
YES	25	25%
NO	75	75%
TOTAL	100	100%

Age Group	Total Number	%
18-29	39	39%
30-39	19	19%
40-49	19	19%
50-59	14	14%
60+	9	9%
TOTAL	100	100%

Have you noticed a change in the stream usage over the past 10 – 20 years?

	Total Number	%
YES	24	24%
NO	76	76%
TOTAL	100	100%

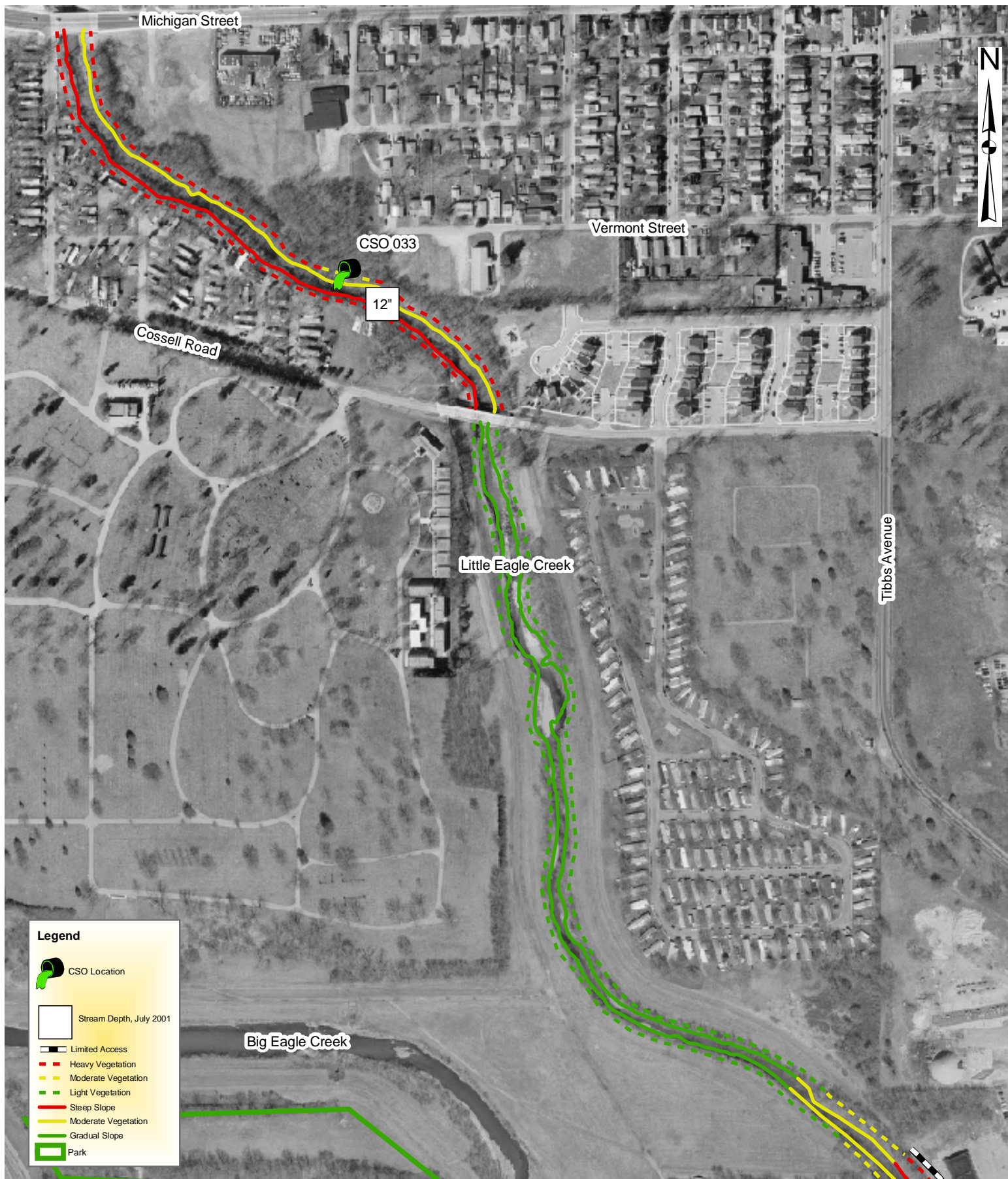


Figure 2-8a
Physical Stream Characteristics
Eagle Creek
Sheet 1 of 6

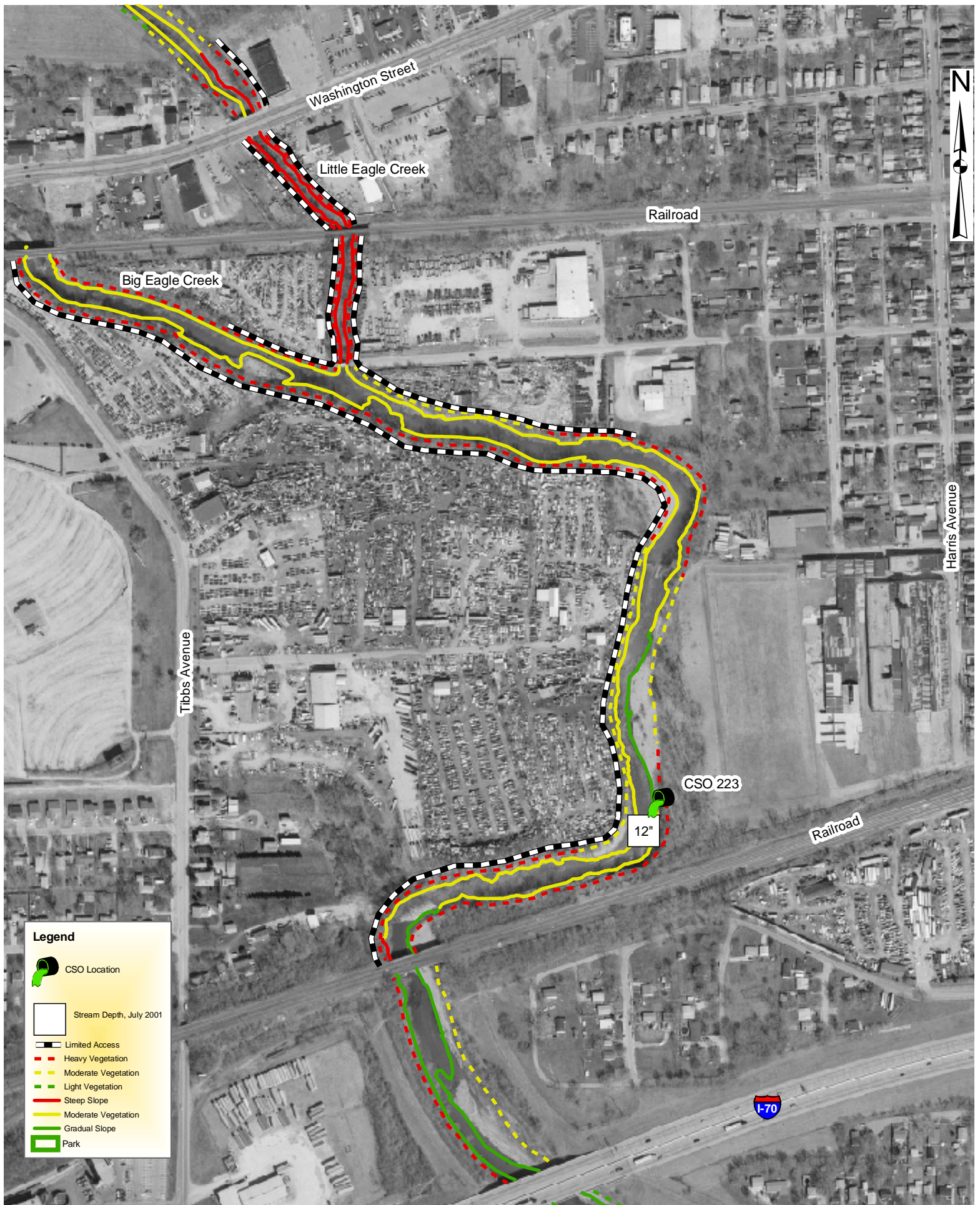


Figure 2-8b
Physical Stream Characteristics
Eagle Creek
Sheet 2 of 6



Figure 2-8c
Physical Stream Characteristics
Eagle Creek
Sheet 3 of 6

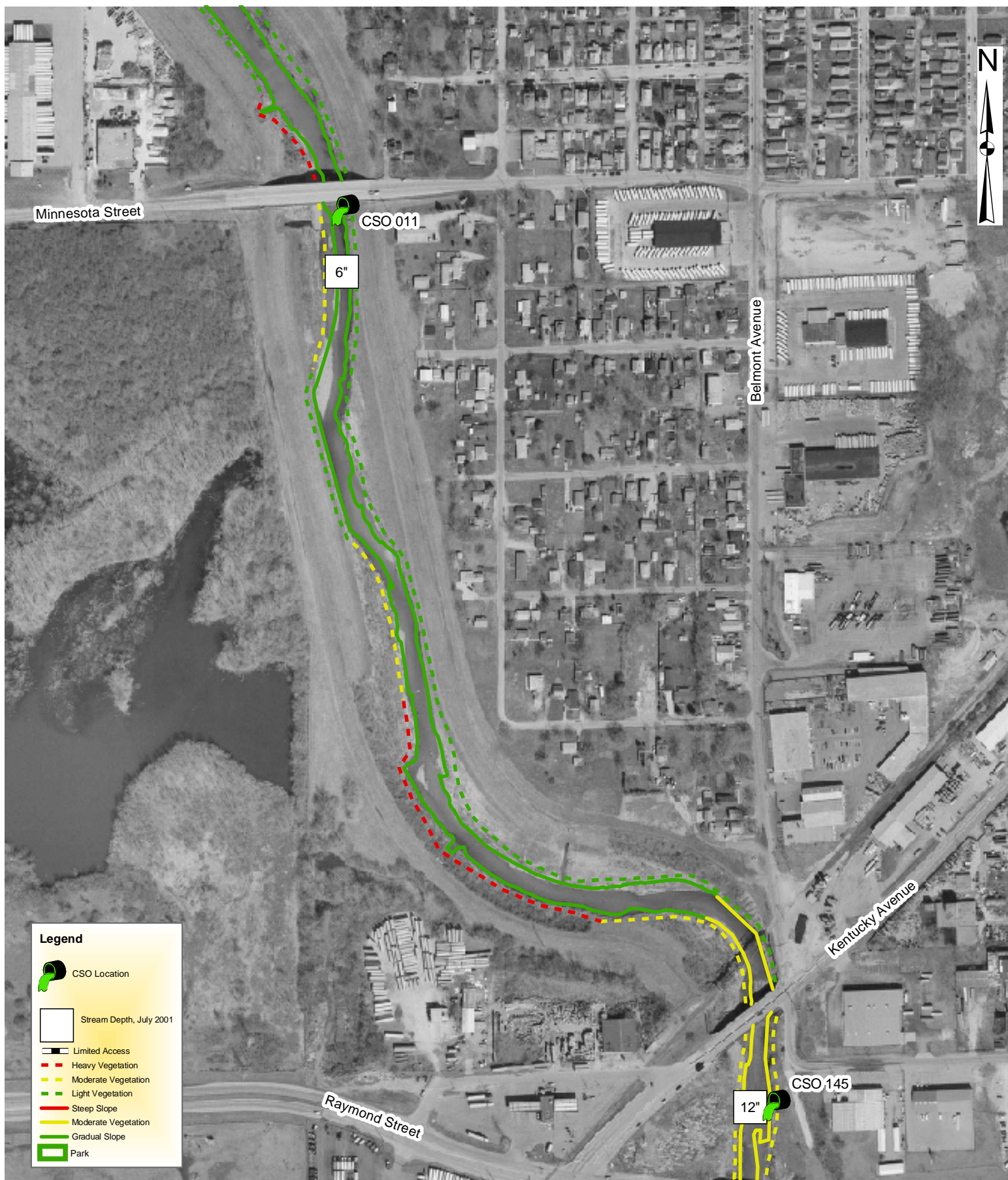


Figure 2-8d
Physical Stream Characteristics
Eagle Creek
Sheet 4 of 6

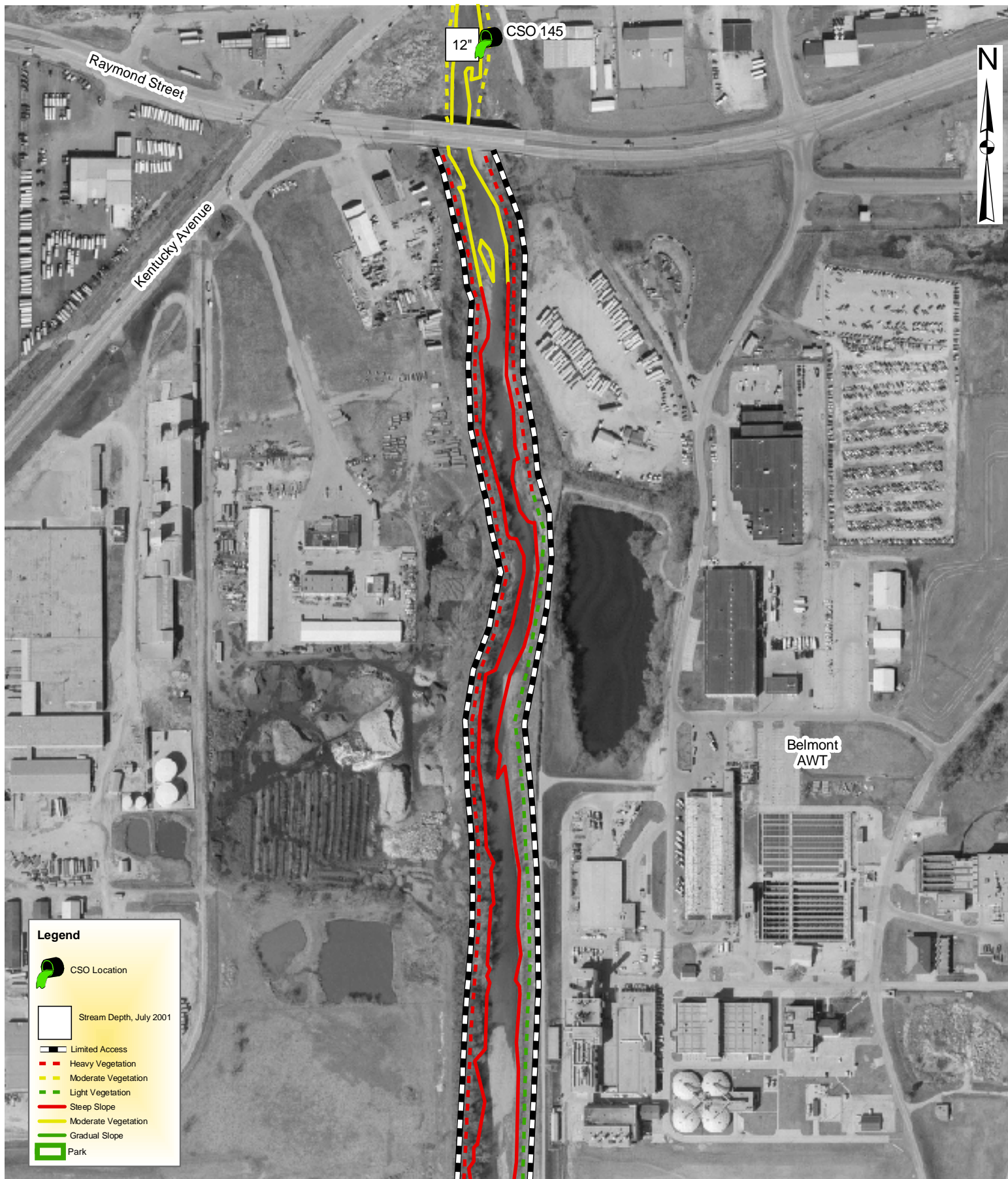


Figure 2-8e
Physical Stream Characteristics
Eagle Creek
Sheet 5 of 6

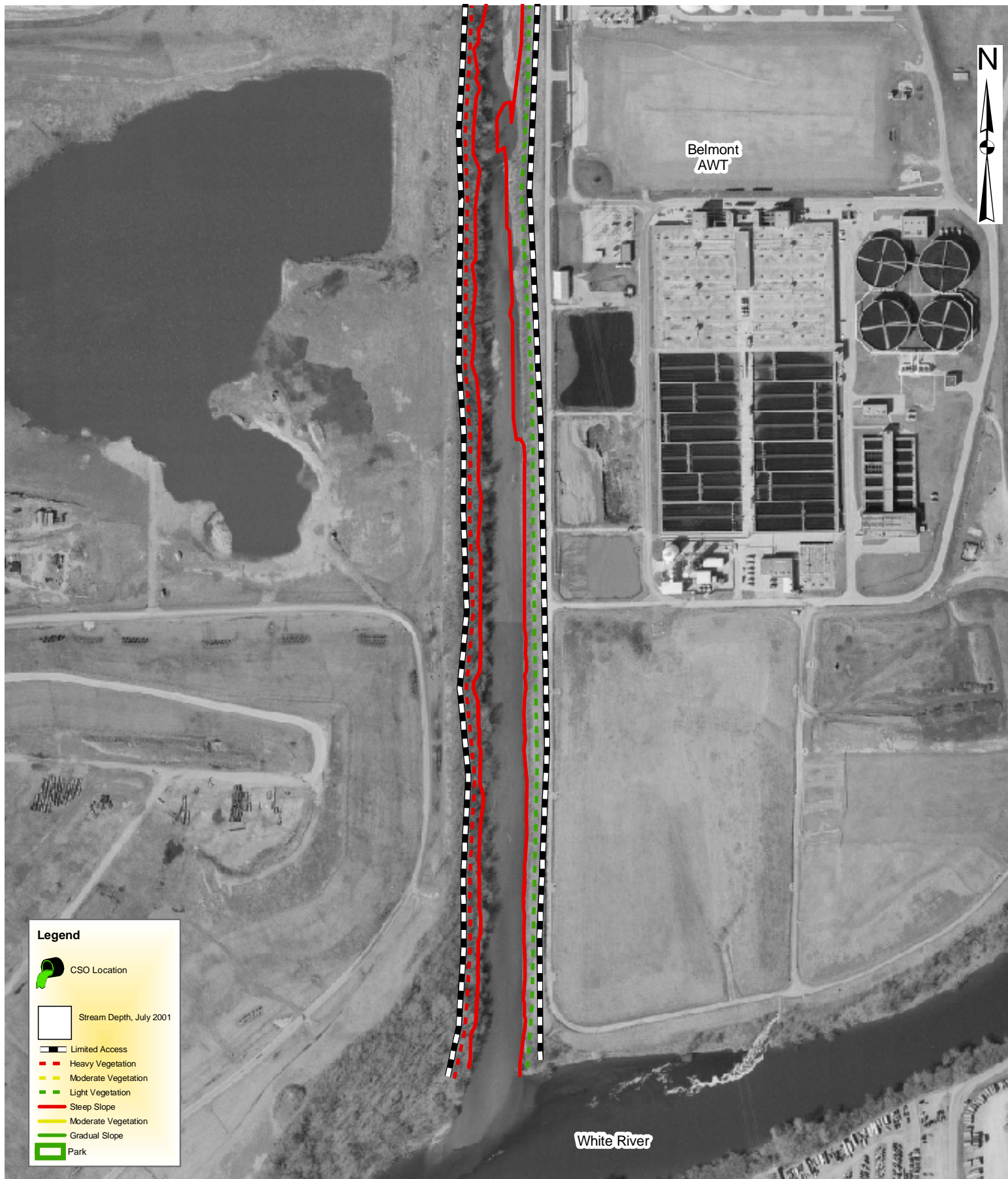


Figure 2-8f
Physical Stream Characteristics
Eagle Creek
Sheet 6 of 6

INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

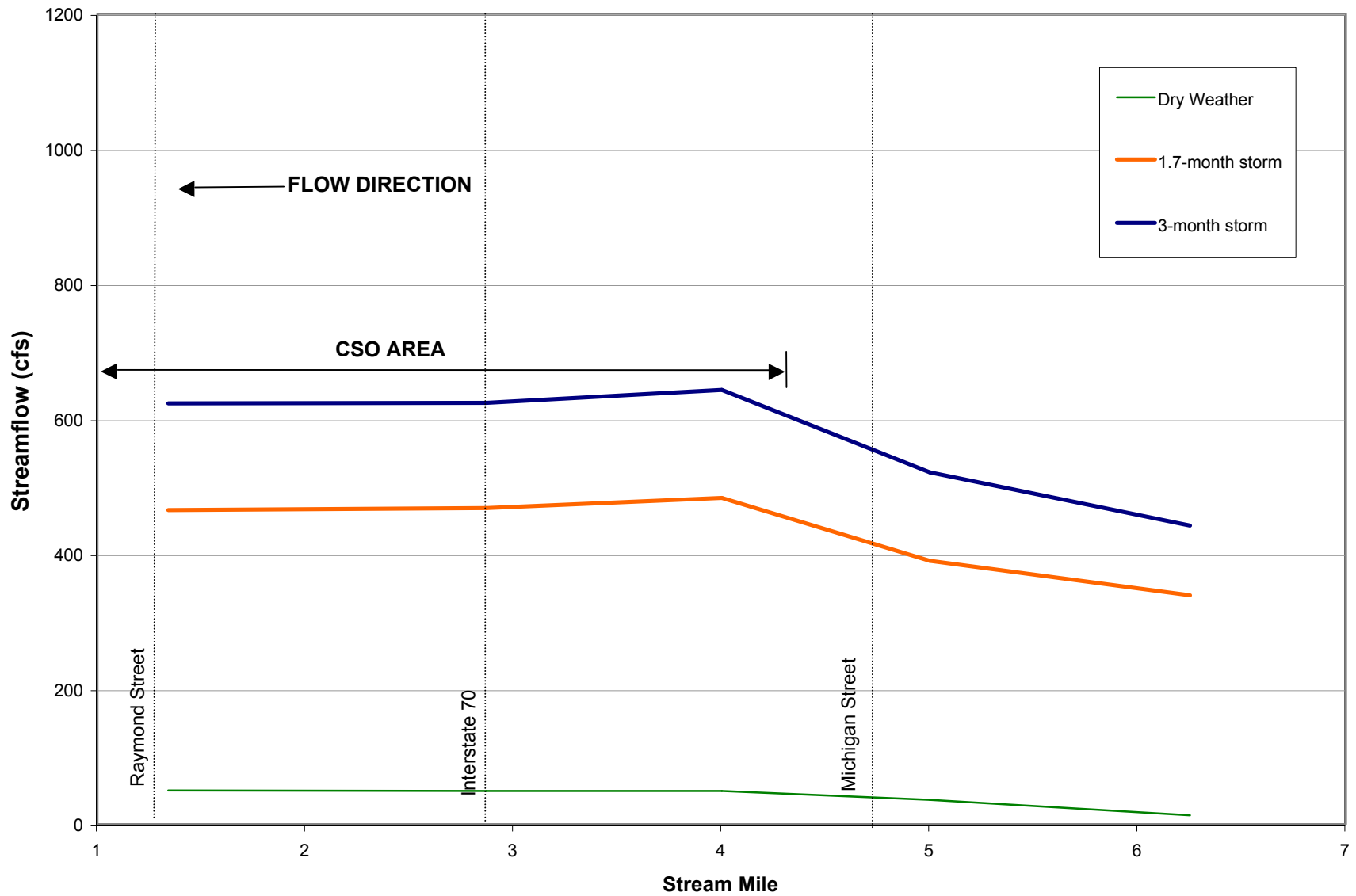
Use Attainability Analysis

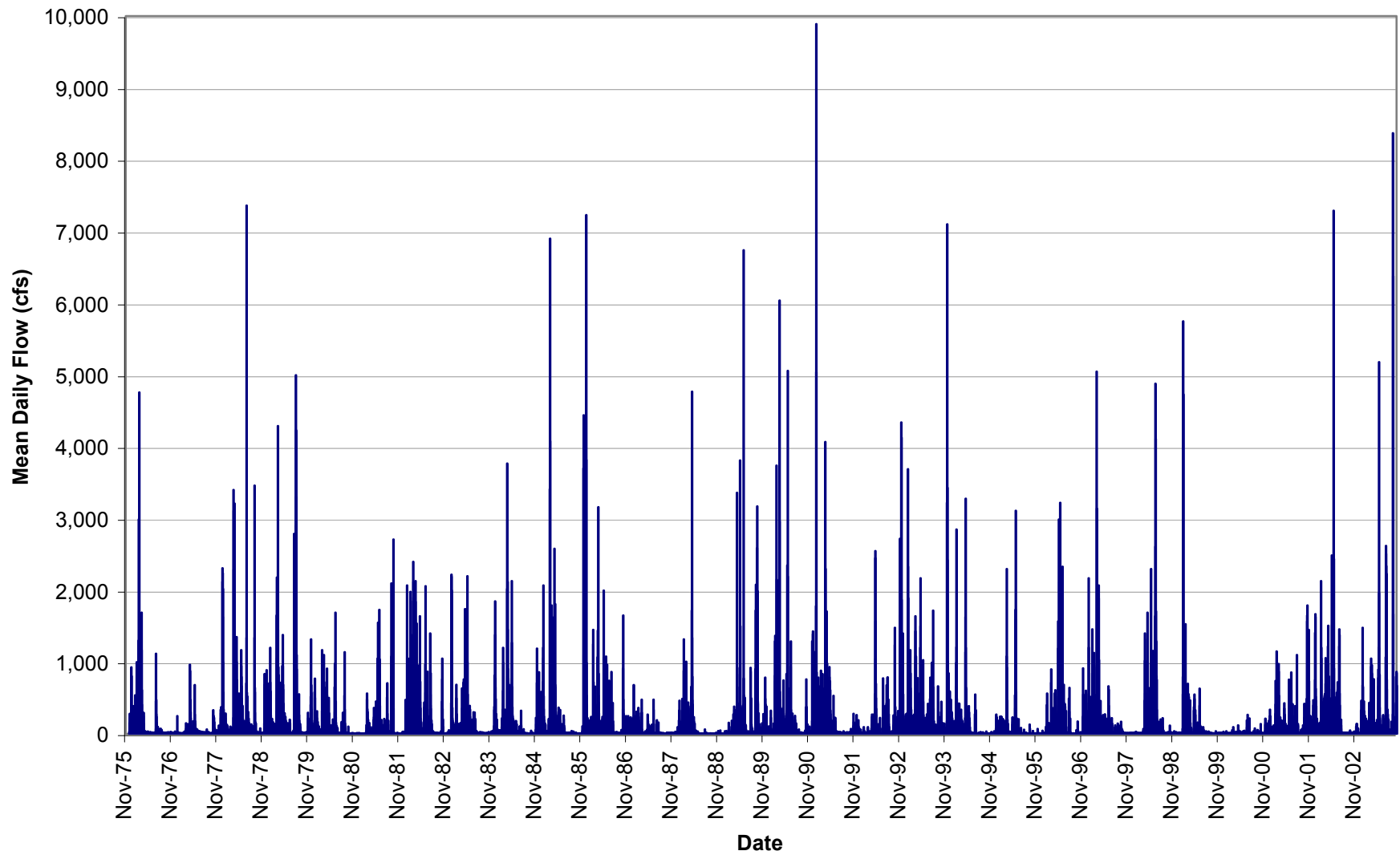
Description of Marion County Streams

Criteria	Big Eagle Creek CSOs					Little Eagle Creek CSOs			
	4	223	4	032	4	011	145	4	033
	Washington St.	Victoria St. and Warman Ave.	McCarty St.	Morris St. and Warman Ave.	Bedford Ave. and Howard St.	Minnesota St. and Pershing Ave.	Raymond St. and Kentucky Ave.	Washington St.	Vermont St. and Somerset Ave.
Overflows per year (average) ¹		26		<1		17	<1		34
Annual Overflow Volume Range (MG/year) ¹		39-53		<1		6-8	<1		12-16
Other Discharges									
Location	downstream of bridge								
Type									
Factors that support/encourage recreational use									
School	no	no	no	no	no	no	no	no	no
Park	no	no	no	no	no	no	no	no	no
Trail	no	no	no	no	no	no	no	no	no
Other			open area by RR bridge						
Factors that prohibit/discourage recreational use									
Warning Signs/City Ordinance ²	N/A	could not locate	N/A	yes	N/A	yes	could not locate	N/A	could not locate
Fence	no	wall	no	no	no	no	no	walls	no
Steep Banks	no	no	no	no	no	no	gradual	yes	no
Other	dense vegetation and rocky banks downstream	heavy woods				vegetation	vegetation	dense vegetation	vegetation
Access									
North/East Bank	Moderately Difficult	Extremely Difficult	Extremely Difficult	Easy	Extremely Difficult	Easy	Extremely Difficult	Extremely Difficult	Extremely Difficult
South/West Bank	Extremely Difficult	Extremely Difficult	Easy	Easy	Extremely Difficult	Easy	Extremely Difficult	Extremely Difficult	Extremely Difficult
Stream's Physical Attributes									
Depth	1 ft.	6 inch - 1 ft.	1 ft. **	1 ft.	6 inch - 1 ft.	6 inches	6 inch - 1 ft.	1 ft.	1 ft.
Velocity	slow	slow	slow	slow	slow	slow	slow	slow	slow
Width	20 ft.	25 - 30 ft.	20 ft.	20 ft.	20 ft.	20 ft.	25 - 30 ft.	20 - 25 ft.	20 - 25 ft.
Substrate	sandy upstream, rocky downstream	rocks	some rocks, sand	some rocks, sand	some rocks	some rocks, sand	sandy, rock	rocky	some rocks, sand
Safety	no	no	no	yes	OK	yes	OK	no	OK upstream, no downstream
Land Use									
Public	yes	no	no	yes	no	no	no	yes	yes
Residential/Wooded	no	yes	yes	yes	no	yes	no	no	yes
Industrial/Commercial	yes	no	no	no	yes	yes	yes	yes	no
Stream Use									
Habitat for Aquatic Species									
Natural riparian	yes	yes	yes	yes	yes	yes	yes	yes, downstream	yes
Partially Developed (Subdivision)									
Fully Urbanized Development		yes						yes, upstream	

- Notes:
- 1. Overflows per year and volume range were revised June 2004.
 - 2. New bilingual warning signs are being placed at all CSO locations.
 - 3. The data for this CSO was collected in June 2004.
 - 4. Pictures not taken by CSO, additional river pictures.

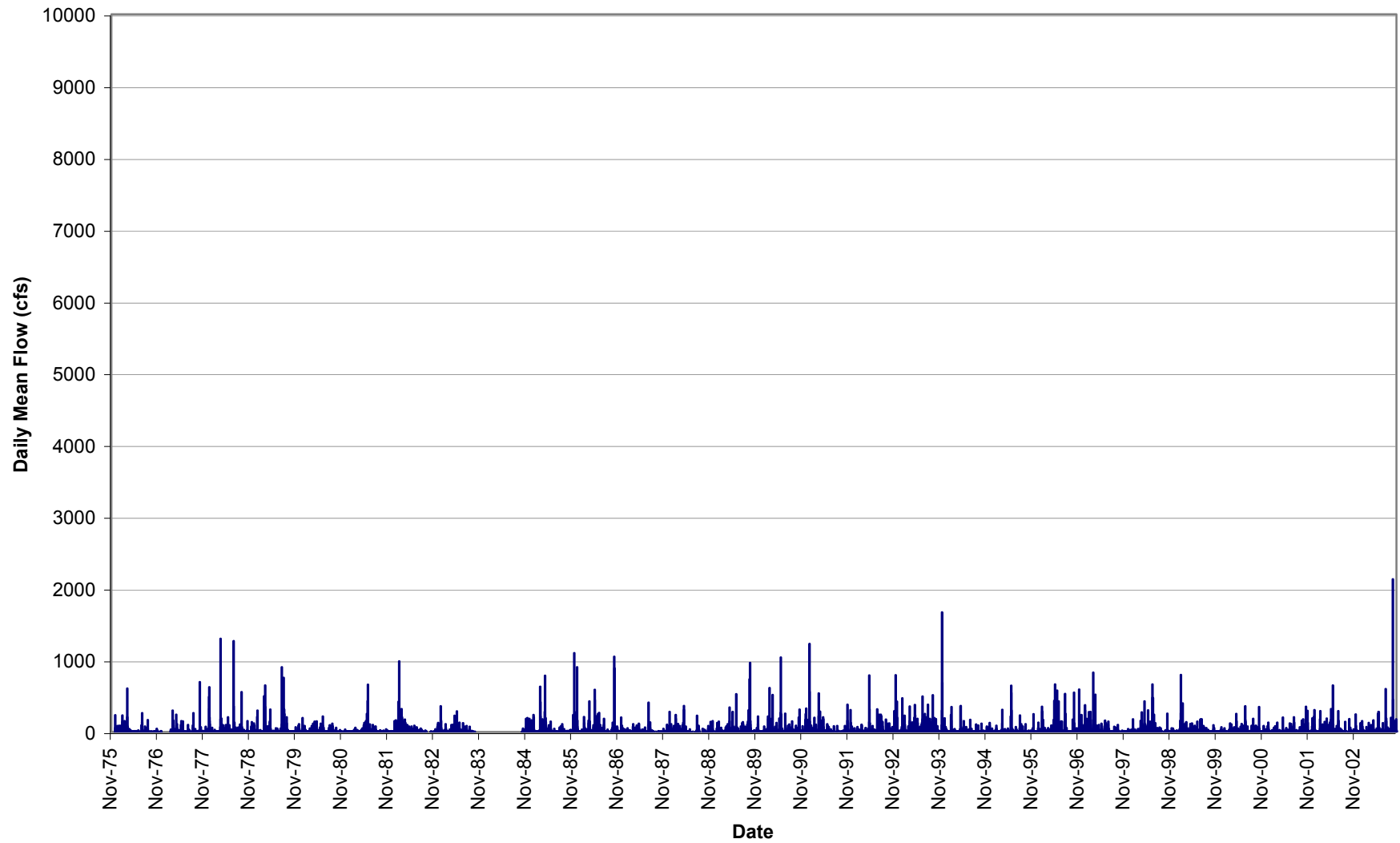
Modeled Maximum Streamflow in Eagle Creek





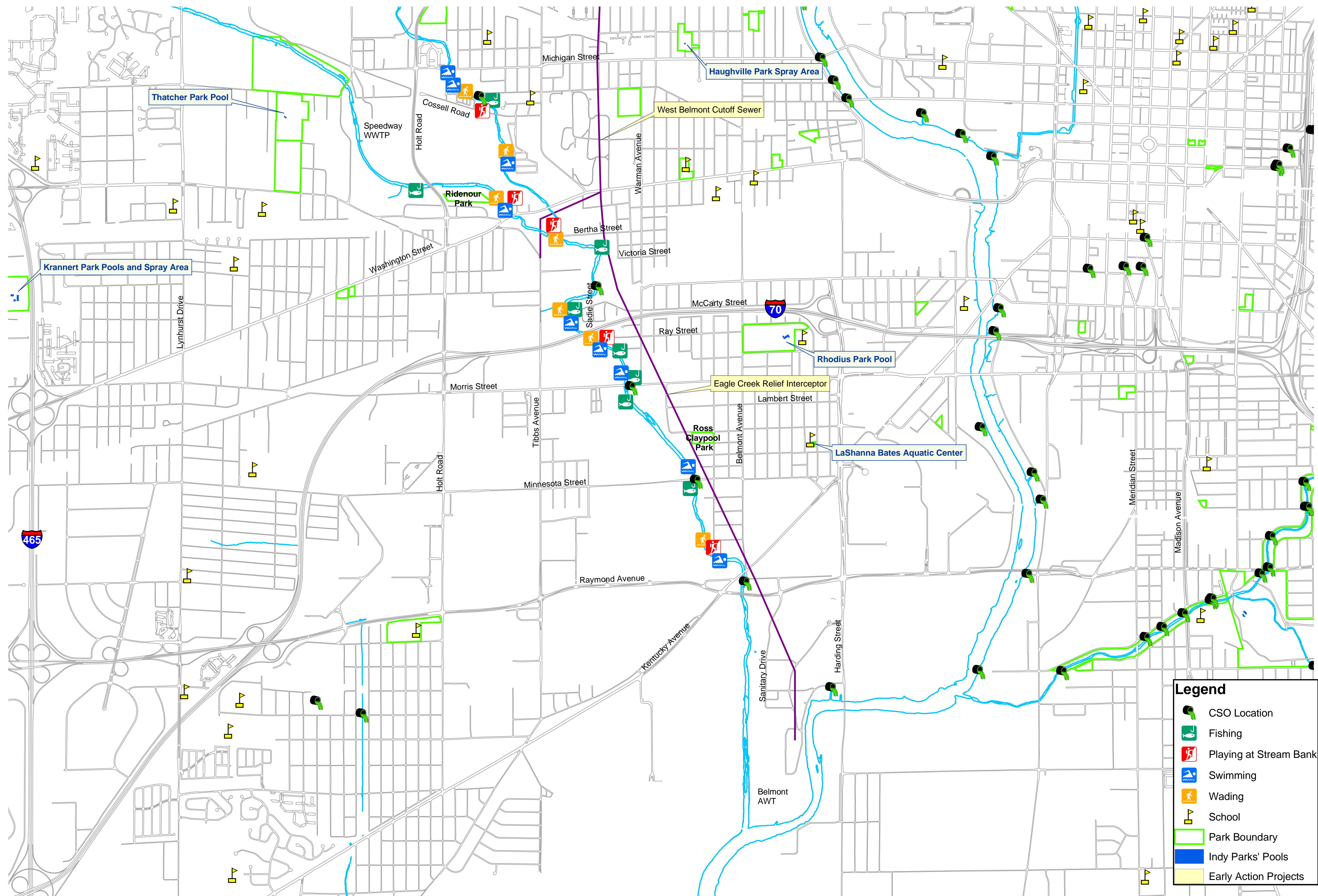
Source: USGS gauge station 03353500 in Eagle Creek at Indianapolis,
November 28, 1975 to September 30, 2003.

**Flow Variations in Eagle Creek
at Lynnhurst Drive**



Flow Variations in Little Eagle Creek at Speedway

Source: USGS gauge station 03353600 in Little Eagle Creek at Speedway,
November 28, 1975 to September 30, 2003.



Legend

- CSO Location
- Fishing
- Playing at Stream Bank
- Swimming
- Wading
- School
- Park Boundary
- Indy Parks' Pools
- Early Action Projects

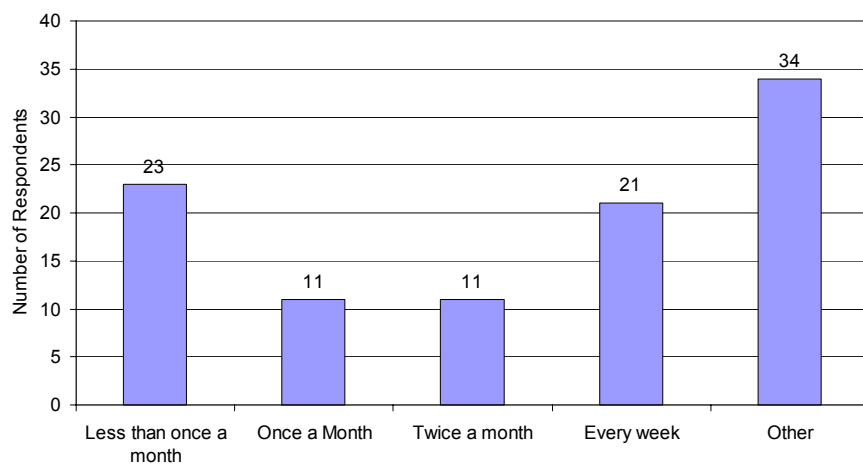
Eagle Creek
Reported and Observed Uses

Eagle Creek Use Survey Data

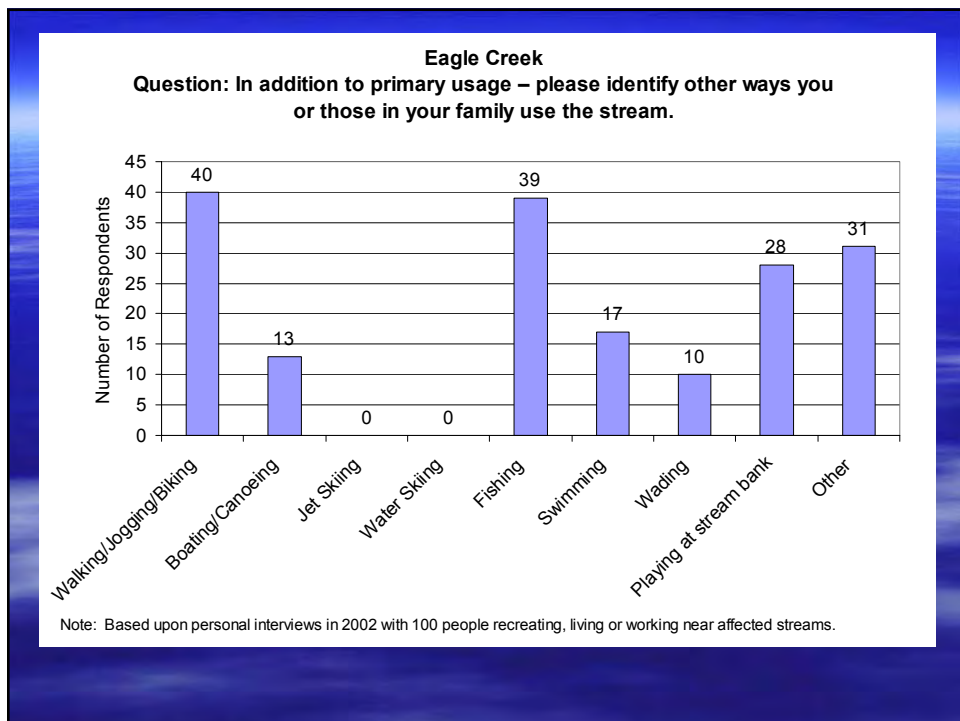
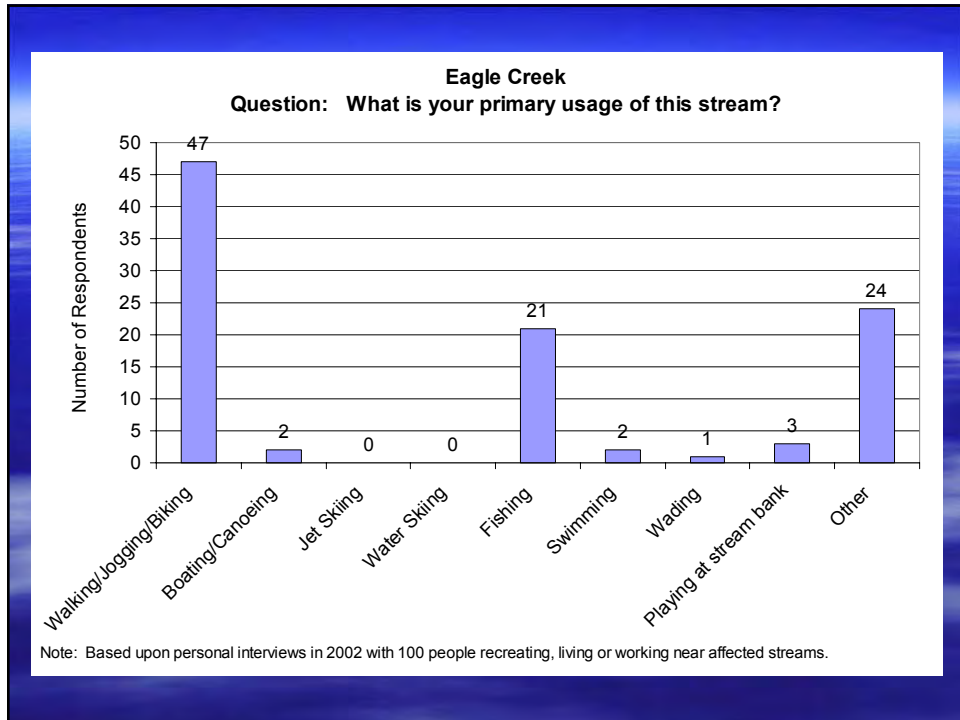


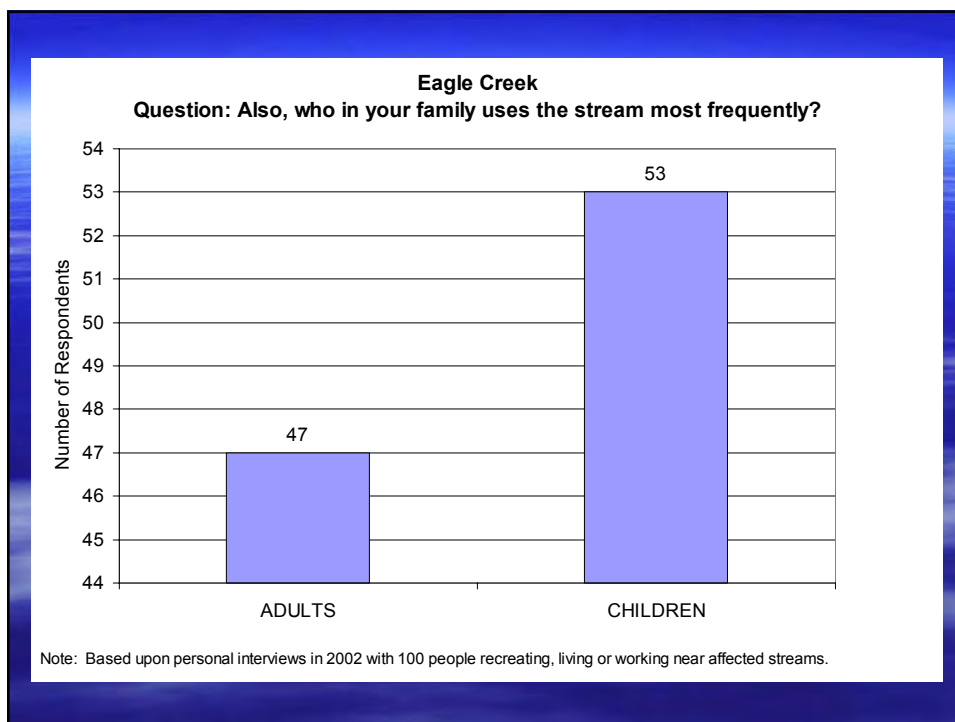
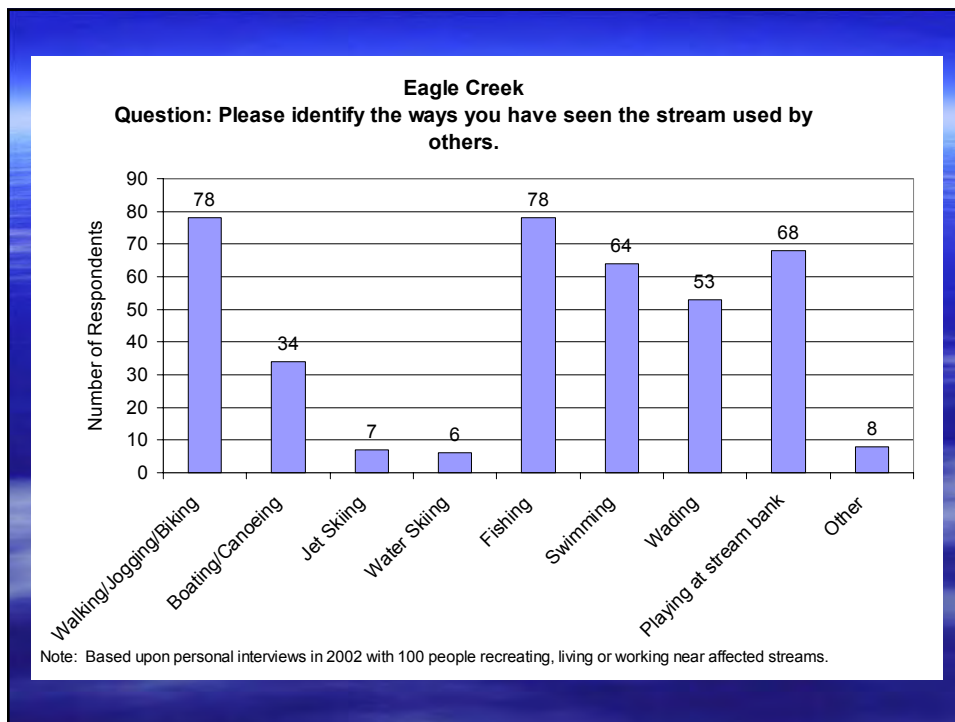
Eagle Creek

Question: In a typical year, how often have you or any member of your family come into water contact with Eagle Creek?



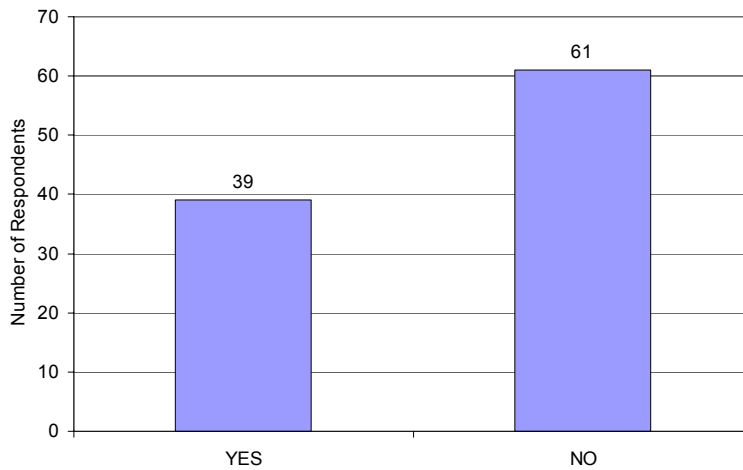
Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.





Eagle Creek

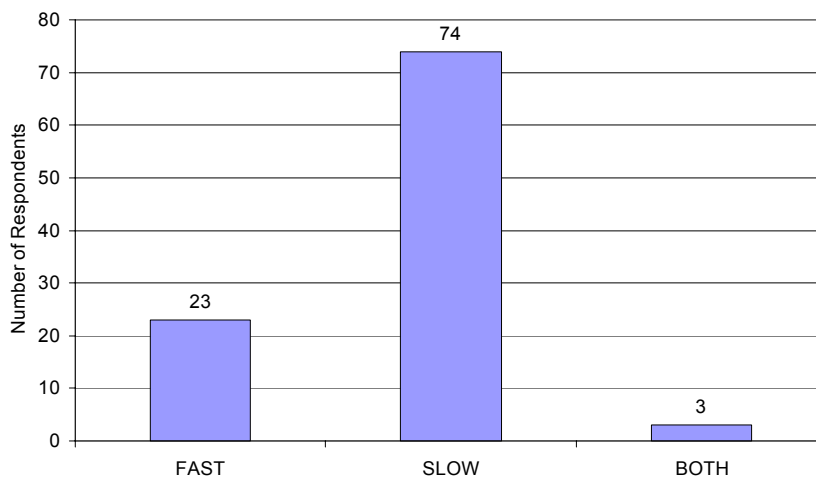
Question: Have you observed children or adults playing in the stream during or within 24 hours after a rainfall?



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Eagle Creek

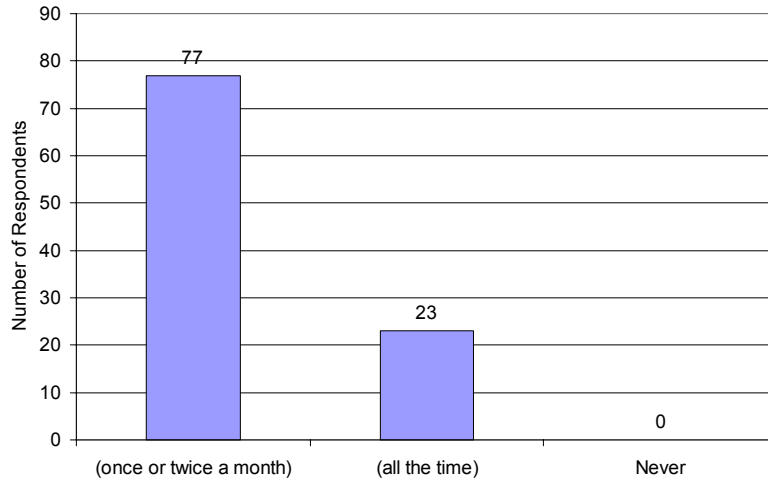
Question: Based on your experience, do you see children or adults playing in the stream when the current is fast or slow?



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Eagle Creek

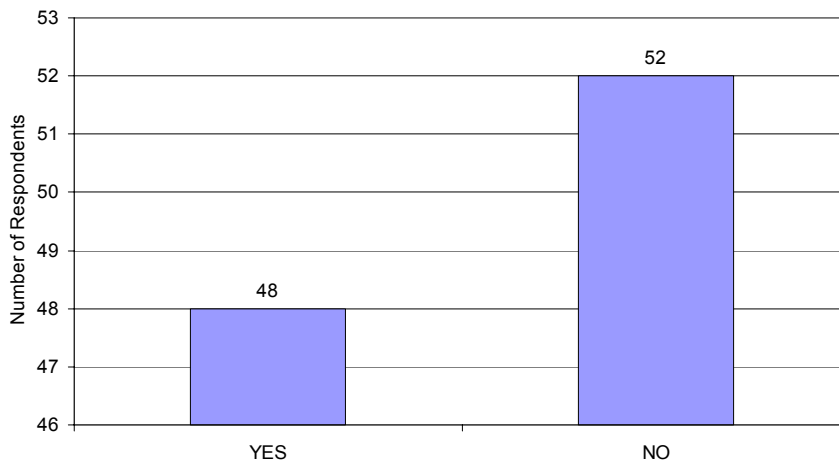
Question: How often would you say you have observed children or adults playing in the stream after a rainfall?



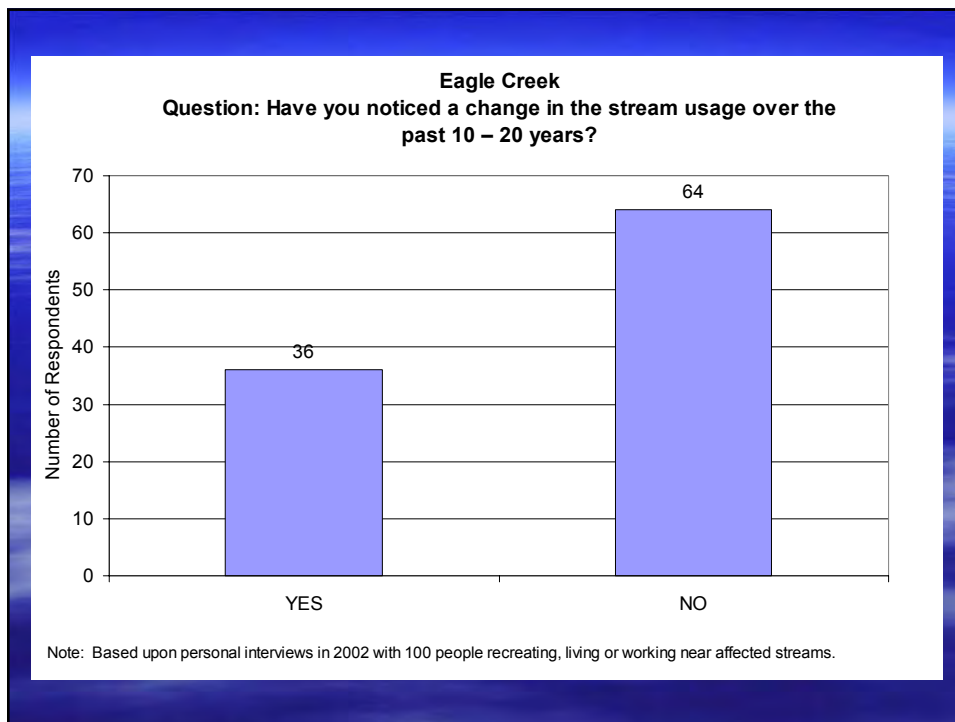
Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Eagle Creek

Question: Are you aware that signs are posted along the streams warning people to stay away because of pollution from sewage?

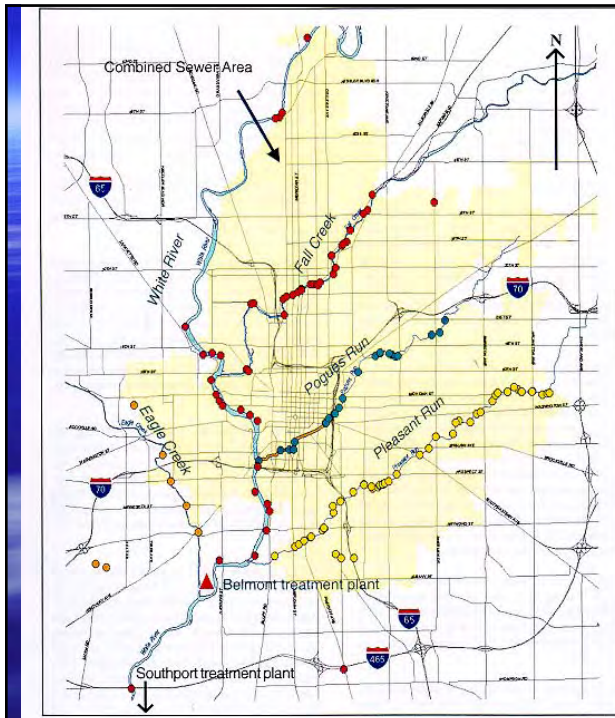


Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.



Location of Uses on Eagle Creek

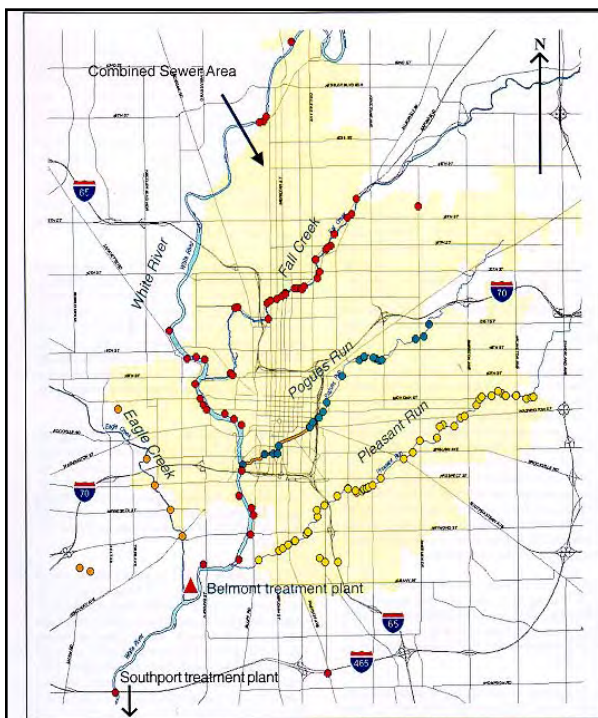
Activity	Location/Direct Respondent	Stream Survey	MCHD
PSB/W/S	Pershing Street		
PSB/W/S	835 Sadie St. to 805 Sadie St. (off McCarty St.)		
PSB/W/S	3746 W. Creston to 3852 W. Creston		
PSB/W/S	2800 Ray St. to 2899 Ray St.		
Wade/Swim	Ponderosa Trailer Park (Cossell Rd.)		
Fishing	I-70 Trailer Park (Washington & Tibbs)		
PSB/Wade	Little Eagle Trailer Park area		
Swim	Under bridge that is over Michigan St. on south side of Michigan St. (east of Holt Rd.)		
Fishing	3500 block of West Morris St. (I-70 Trailer Park)		
Fishing	Standard St. (off of Warman)		
Fishing	Off of Warman St. near Bertha		
Swim & Fishing	Minnesota & Belmont	X	X
Wade/Swim & Fishing	McCarty & Tip	X	X
Fish/Swim	Morris		
PSB/S/W	The Bottoms (area referenced for children in the water, boundaries defined as: Warman E., Levee W., McCarty N., Washington & Standard S.)		



EAGLE CREEK: Location Activity Direct Respondent

Clusters of activity noted Minnesota to Washington.

1. Stream access slope.
2. Close proximity of levee to residents.
3. Attractive water depth.
4. Multiple trailer parks where pools are not allowed.
5. Attract children to the water (wade, swim, play at stream bank).
6. Adults attracted to fishing as sport given access. (Although 80% of verbatims cited, "We don't eat the catch".)



EAGLE CREEK: Location Activity Direct Respondent

PSB/W/S	Pershing Street
PSB/W/S	835 Sadie St. to 805 Sadie St. (off McCarty St.)
PSB/W/S	3746 W. Creston to 3852 W. Creston
PSB/W/S	2800 Ray St. to 2899 Ray St.
Wade/Swim	Ponderosa Trailer Park (Cossell)
Fishing	I-70 Trailer Park (Washington & Tibbs)
PSB/Wade	Little Eagle Trailer Park area
Swim	Under bridge that is over Michigan St. on south side of Michigan St. (east of Holt Rd.)
Fishing	3500 block of West Morris St. (I-70 Trailer Park)
Fishing	Standard St. (off of Warman)
Fishing	Off of Warman St. near Bertha
Swim & Fish	† *Minnesota & Belmont
W/S/F	† * McCarty & Tip
Fish/Swim	Morris
PSB/S/W	The Bottoms (area referenced for children in the water, boundaries defined as: Warman E., Levee W., McCarty N., Washington & Standard S.)

† Reported on Stream Survey.

* Reported to MCHD.

FINAL Survey Results - Eagle Creek

In a typical year, how often have you or any member of your family come into water contact with EAGLE CREEK?

	Total Number	%
Less than once a month	23	23%
Once a Month	11	11%
Twice a month	11	11%
Every week	21	21%
Other	34	34%
TOTALS	100	100%

What is your primary usage of this stream?

	Total Number	%
Walking/Jogging/Biking	47	47%
Boating/Canoeing	2	2%
Jet Skiing	0	0%
Water Skiing	0	0%
Fishing	21	21%
Swimming	2	2%
Wading	1	1%
Playing at stream bank	3	3%
Other	24	24%
TOTALS	100	100%

In addition to primary usage – please identify other ways you or those in your family use the stream.

	Total Number	%
Walking/Jogging/Biking	40	22%
Boating/Canoeing	13	7%
Jet Skiing	0	0%
Water Skiing	0	0%
Fishing	39	22%
Swimming	17	10%
Wading	10	6%
Playing at stream bank	28	16%
Other	31	17%
TOTALS	178	100%

Please identify the ways you have seen the stream used by others.

	Total Number	%
Walking/Jogging/Biking	78	20%
Boating/Canoeing	34	9%
Jet Skiing	7	2%
Water Skiing	6	2%
Fishing	78	20%
Swimming	64	16%
Wading	53	13%
Playing at stream bank	68	17%
Other	8	2%
TOTALS	396	100%

Also, who in your family uses the stream most frequently?

	Total Number	%
ADULTS	47	47%
CHILDREN	53	53%
TOTAL	100	100%

Have you observed children or adults playing in the stream during or within 24 hours after a rainfall?

	Total Number	%
YES	39	39%
NO	61	61%
TOTAL	100	100%

Based on your experience, do you see children or adults playing in the stream when the current is fast or slow?

	Total Number	%
FAST	23	23%
SLOW	74	74%
BOTH	3	3%
TOTALS	100	100%

How often would you say you have observed children or adults playing in the stream after a rainfall?

	Total Number	%
(once or twice a month)	77	77%
(all the time)	23	23%
Never	0	0%
TOTALS	100	100%

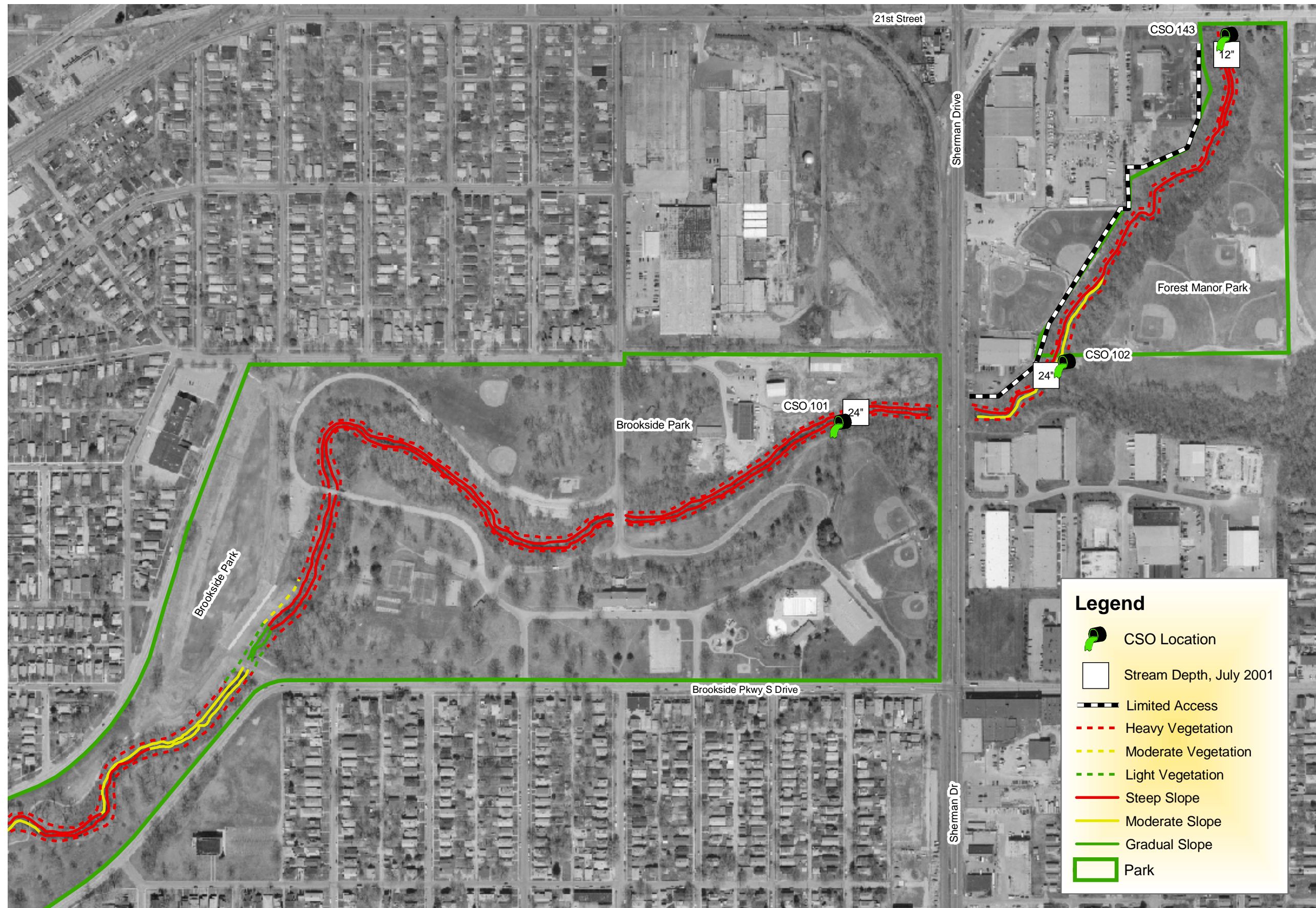
Are you aware that signs are posted along the streams warning people to stay away because of pollution from sewage?

	Total Number	%
YES	48	48%
NO	52	52%
TOTAL	100	100%

Age Group	Total Number	%
18-29	32	32%
30-39	31	31%
40-49	21	21%
50-59	8	8%
60+	8	8%
TOTAL	100	100%

Have you noticed a change in the stream usage over the past 10 – 20 years?

	Total Number	%
YES	36	36%
NO	64	64%
TOTAL	100	100%



Legend

- CSO Location
- Stream Depth, July 2001
- Limited Access
- Heavy Vegetation
- Moderate Vegetation
- Light Vegetation
- Steep Slope
- Moderate Slope
- Gradual Slope
- Park

Figure 2-14a
Physical Stream Characteristics
Pogues Run
Sheet 1 of 3



Figure 2-14b
Physical Stream Characteristics
Pogues Run
Sheet 2 of 3

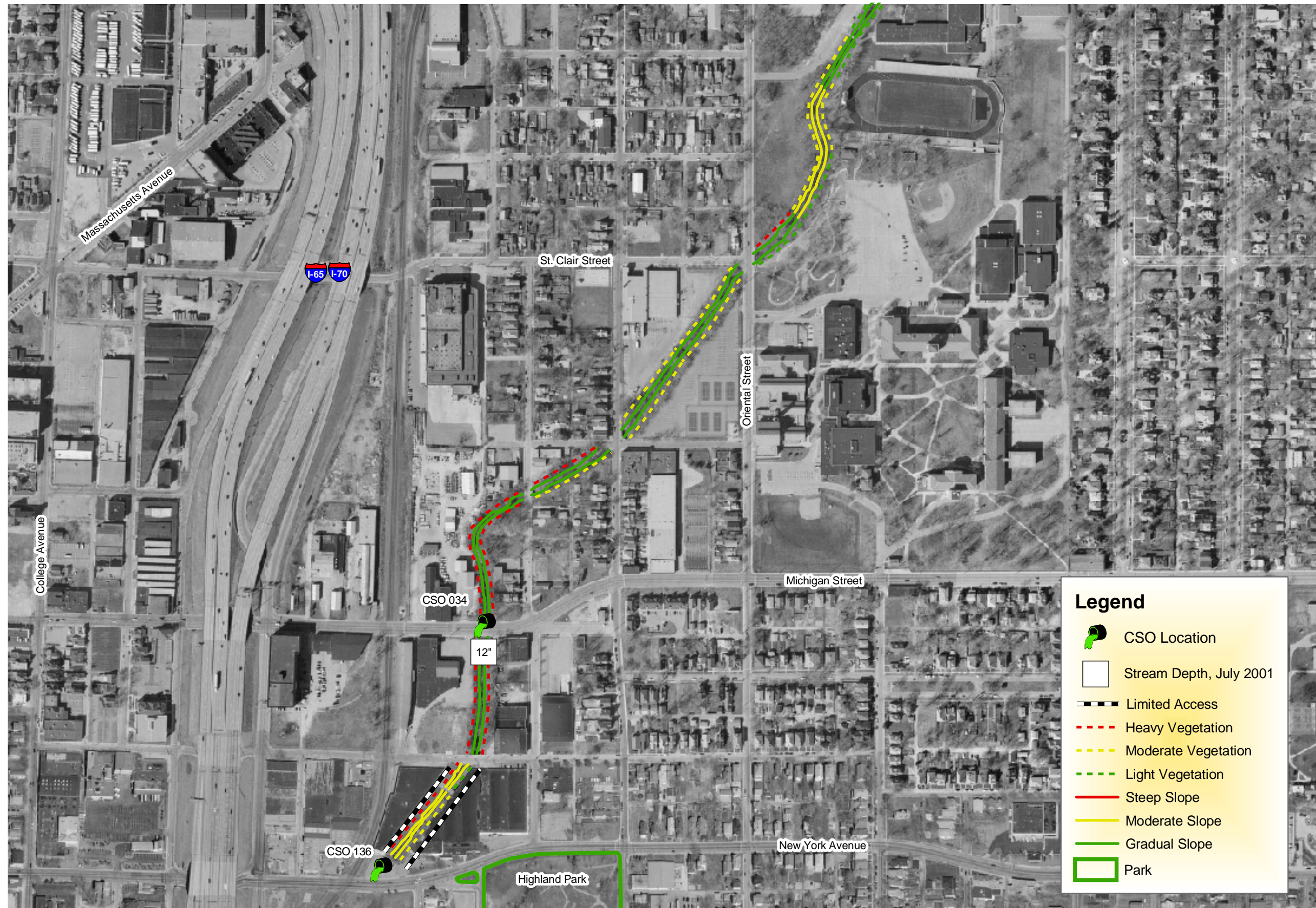


Figure 2-14c
Physical Stream Characteristics
Pogues Run
Sheet 3 of 3

INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Description of Marion County Streams

Pogues Run

	143	102	101	100	099	098	097	096	095	036	⁴	⁴
Criteria	Forest Manor Ave. and 21st St.	Forest Manor Ave. and 19th St.	Sherman Dr. and BPND	BPSD and Rural St.	BPSD and Temple Ave.	Tacoma Ave. and Nowland Ave.	BPSD and Keystone Ave.	BPSD and Nowland Ave.	BPND and Coyner Ave.	Nowland Ave. and Tecumseh St.	Steele and Brookside Ave.	Newman St. and Nowland Ave.
Overflows per year (average) ¹	1	6	10	40	53	2	17	24	2	16		
Annual Overflow Volume Range (MG/year) ¹	<1	3-3	14-19	24-32	155-210	<1	2-2	1-2	1-2	1-1		
Other Discharges												
Location												
Type												
Factors that support/encourage recreational use												
School	no	no	no	no	no	no	no	no	no	no	no	no
Park	yes	ball field	yes, pool and ball field	yes, Spades Park	yes	yes	yes	yes	yes	yes	yes	no
Trail	yes, to CSO	yes	no	no	no	no	no	no	no	leading to CSO, among vegetation	no	no
Other												
Factors that prohibit/discourage recreational use												
Warning Signs/City Ordinance ²	could not locate	yes	yes	could not locate	could not locate	yes	yes	yes	yes	yes	N/A	N/A
Fence	no	no	yes, around CSO	no	no	no	no	no	no	no	no	yes
Steep Banks	yes	gradual	yes	yes on west side	no	gradual	gradual	gradual	gradual	gradual	no	yes
Other	dense vegetation		dense vegetation	dense vegetation	dense vegetation on south side					dense vegetation, but accessible	dense vegetation, but accessible	concrete wall and dense vegetation
Access												
North Bank	Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult		Extremely Difficult	Moderately Difficult	Extremely Difficult
South Bank	Extremely Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult	Moderately Difficult	Moderately Difficult		Extremely Difficult	Moderately Difficult	Extremely Difficult
Stream's Physical Attributes												
Depth	1 ft.	1 -2 ft.	1 -2 ft.	6 inches	6 inches	6 inch - 1 ft.	6 inch - 1 ft.	6 inch - 1 ft.	6 inch - 1 ft.	6 inch - 1 ft.	6 inch - 1 ft.	6 inch - 1 ft.
Velocity	very slow	slow	slow	slow	slow	slow	slow	slow	slow	slow	slow	slow
Width	15 ft.	10 - 15 ft.	10 - 15 ft.	10 - 15 ft.	10 - 15 ft.	10 - 15 ft.	10 - 15 ft.	10 - 15 ft.	10 - 15 ft.	10 ft.	10 ft.	10 ft.
Substrate	rocky	sand and rocks	sand and rocks	rocky	rocky	rocky	rocky	rocky	rocky	rocky	rocky	rocky
Safety	no	no	no	no	no	no	no	no	no	no	no	no
Land Use												
Public	yes	yes	yes	no	no	no	no	no	no	no	no	no
Residential/Wooded	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industrial/Commercial	no	no	no	no	no	no	no	no	no	no	no	no
Stream Use												
Habitat for Aquatic Species												
Natural riparian	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	
Partially Developed (Subdivision)												yes
Fully Urbanized Development												
Other Comments			In Brookside Park by ball field tucked back deep in woods, no sign outside of very dense woods									

Notes:

1. Overflows per year and volume range were revised June 2004.
2. New bilingual warning signs are being placed at all CSO locations.
3. The data for this CSO was collected in June 2004.
4. Pictures not taken by CSO, additional river pictures.

INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Description of Marion County Streams

Pogues Run

	035	034	034A ³	⁴	136	137	152	133	138	125	129	153
Criteria	Arsenal Ave. and 10th St.	Michigan St. and Dorman Ave.	548 Dorman Ave.	Vermont St.and Dorman St.	New York St. and Dorman Ave.	Pine St. and Ohio St.	Pine St. and Ohio St.	Market St. and Pine St.	College Ave. and Washington St.	Meridian St. and South St.	Meridian St. and Merrill St.	Illinois Ave. and Merrill St.
Overflows per year (average) ¹	31	19			12	5	48	13	4	9	4	8
Annual Overflow Volume Range (MG/year) ¹	24-32	56-76			1-1	<1	77-104	4-6	<1	26-35	2-2	<1
Other Discharges												
Location					In Pogues Run	In Pogues Run	In Pogues Run	In Pogues Run	In Pogues Run	In Pogues Run	In Pogues Run	In Pogues Run
Type					Tunnel	Tunnel	Tunnel	Tunnel	Tunnel	Tunnel	Tunnel	Tunnel
Factors that support/encourage recreational use												
School	yes, 101	no	no	no								
Park	no	no	no	no								
Trail	no	no	no	no								
Other												
Factors that prohibit/discourage recreational use												
Warning Signs/City Ordinance ²	yes	yes, near CSO	could not locate	N/A								
Fence	no	no	no	no								
Steep Banks	no	no	no	concrete slope on east bank upstream from bridge								
Other		vegetation	vegetation	dense vegetation and rocks on west bank								
Access												
North Bank	Easy	Extremely Difficult	Easy	Extremely Difficult								
South Bank	Easy	Extremely Difficult	Easy	Moderately Difficult								
Stream's Physical Attributes												
Depth	6 inch - 1 ft.	6 inch - 1 ft.	3 inch.	6 inch - 1 ft.								
Velocity	slow	slow	slow	slow								
Width	5 - 8 ft.	10 ft.	8 ft.	10 ft.								
Substrate	mostly rocky	rocky	rocky	rocky								
Safety	OK	no	no	no								
Land Use												
Public	yes	yes	no	no								
Residential/Wooded	yes	no	yes	yes								
Industrial/Commercial	no	no	no	yes								
Stream Use												
Habitat for Aquatic Species												
Natural riparian	yes	yes		yes, on east bank								
Partially Developed (Subdivision)			yes									
Fully Urbanized Development				yes, on west bank								
Other Comments		very strong smelling										

- Notes:
- 1. Overflows per year and volume range were revised June 2004.
 - 2. New bilingual warning signs are being placed at all CSO locations.
 - 3. The data for this CSO was collected in June 2004.
 - 4. Pictures not taken by CSO, additional river pictures.

Use Attainability Analysis

Description of Marion County Streams

Pogues Run

	128	115	A38
Criteria	Senate Ave. and Merrill St.	Henry St. and Kentucky Ave.	Davidson St. and Washington St.
Overflows per year (average) ¹	33	79	28
Annual Overflow Volume Range (MG/year) ¹	131-177	378-512	41-55
Other Discharges			
Location	In Pogues Run	In Pogues Run	In Pogues Run
Type	Tunnel	Tunnel	Tunnel
Factors that support/encourage recreational use			
School			
Park			
Trail			
Other			
Factors that prohibit/discourage recreational use			
Warning Signs/City Ordinance ²			
Fence			
Steep Banks			
Other			
Access			
North Bank			
South Bank			
Stream's Physical Attributes			
Depth			
Velocity			
Width			
Substrate			
Safety			
Land Use			
Public			
Residential/Wooded			
Industrial/Commercial			
Stream Use			
Habitat for Aquatic Species			
Natural riparian			
Partially Developed (Subdivision)			
Fully Urbanized Development			
Other Comments			

Notes:

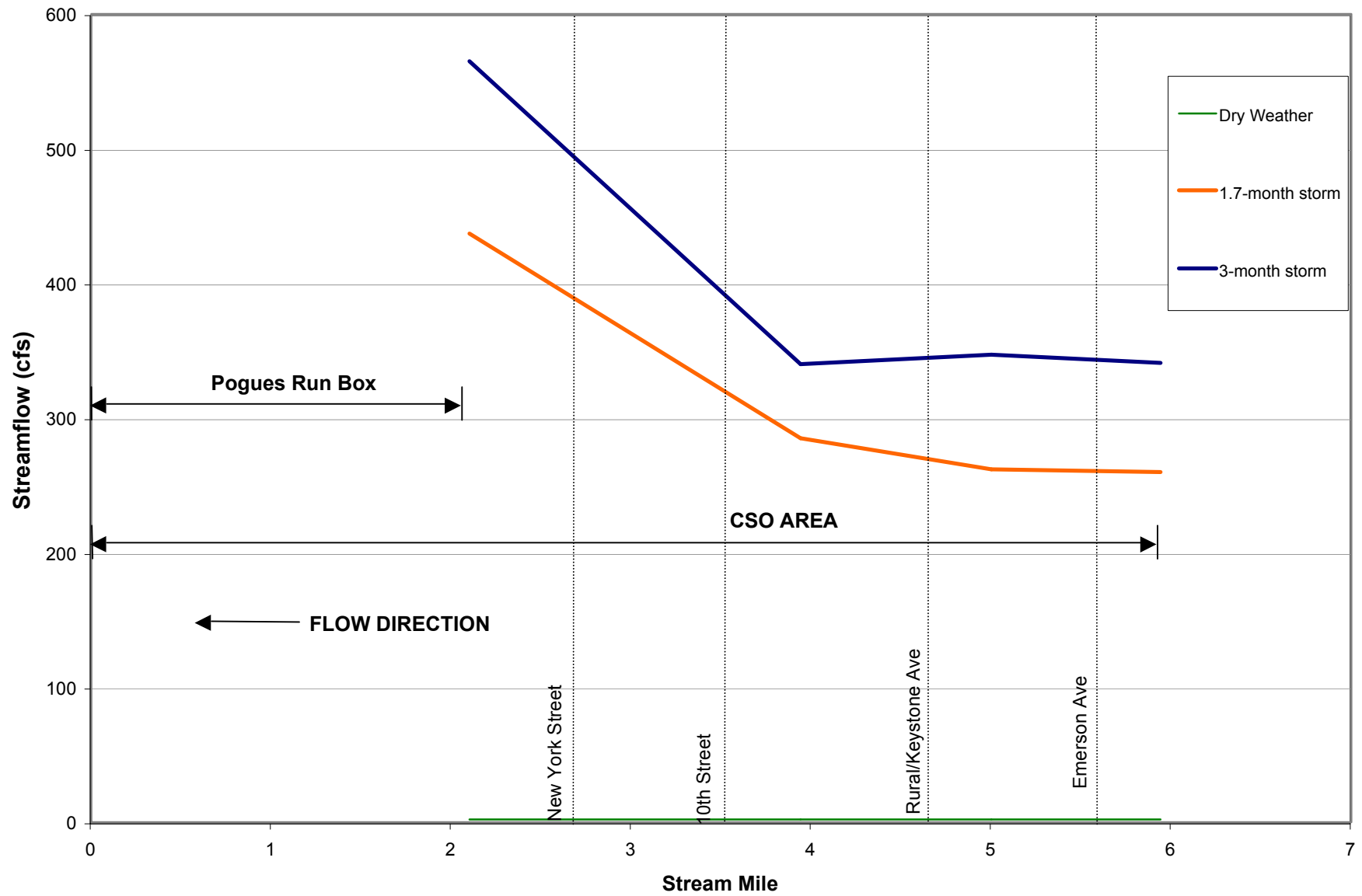
1. Overflows per year and volume range were revised June 2004.

2. New bilingual warning signs are being placed at all CSO locations.

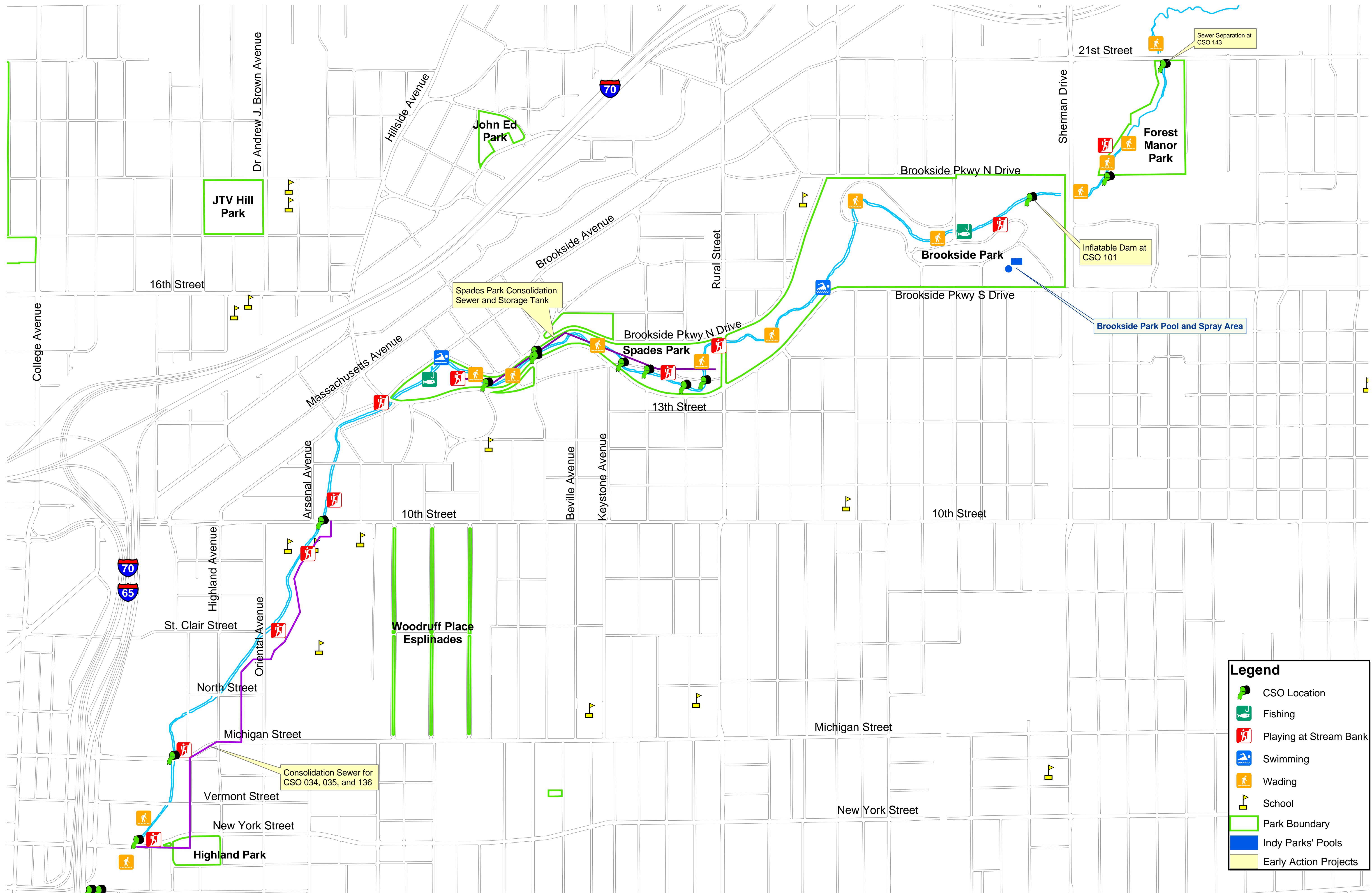
3. The data for this CSO was collected in June 2004.

4. Pictures not taken by CSO, additional river pictures.

Modeled Maximum Streamflow in Pogues Run

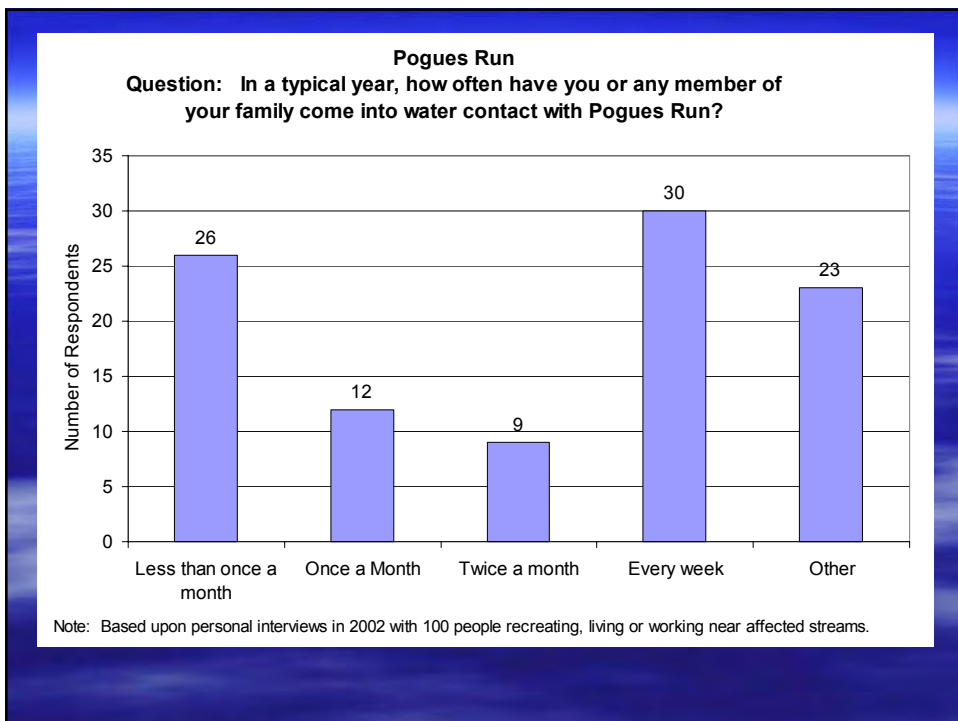


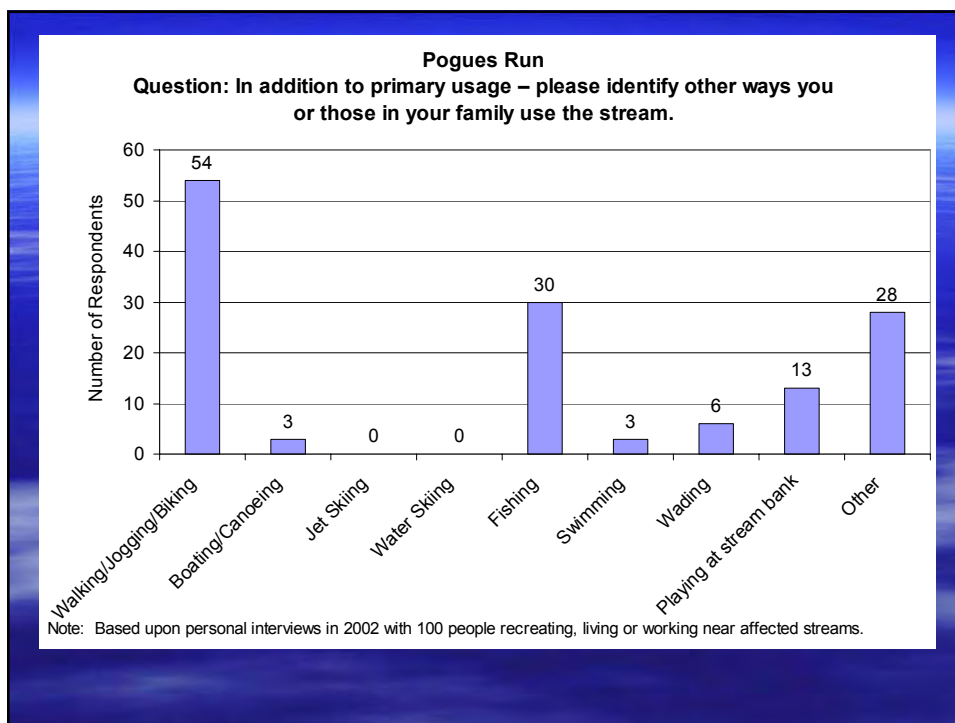
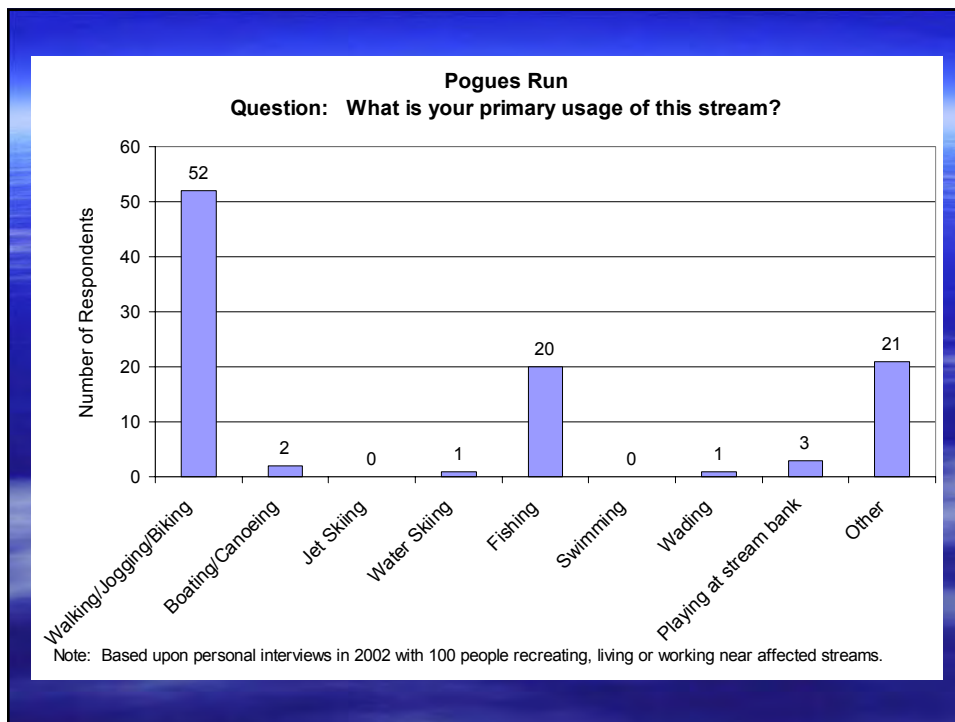
The USGS does not have a gauge on Pogues Run. However, given the similarities between the Pogues Run and Pleasant Run watersheds, the flow measured by the USGS gauges on Pleasant Run can be assumed similar to flows in Pogues Run. These flow graphs are located in Pleasant Run's Appendix B.



Note: There is also an early action project for Pogues Run on converting part of the tunnel for storage.

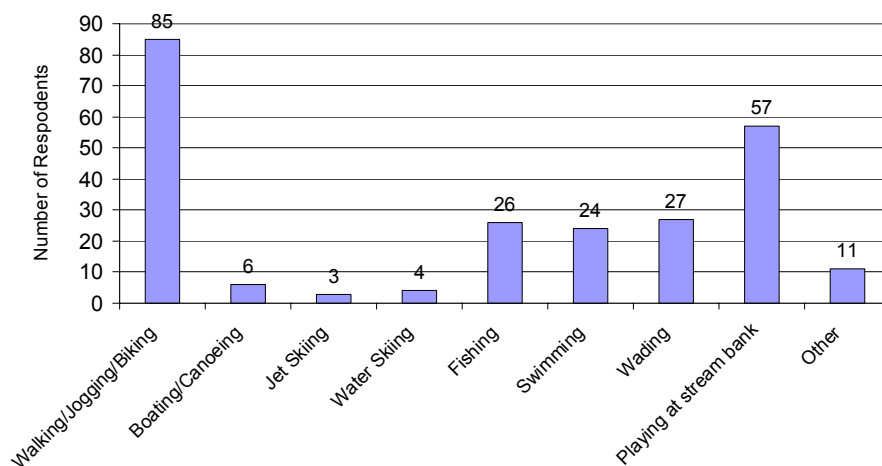
**Pogues Run
Reported and Observed Uses**





Pogues Run

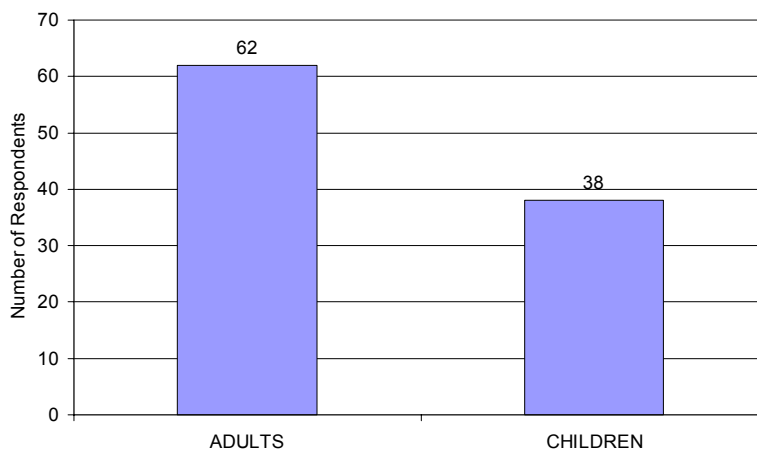
Question: Please identify the ways you have seen the stream used by others.



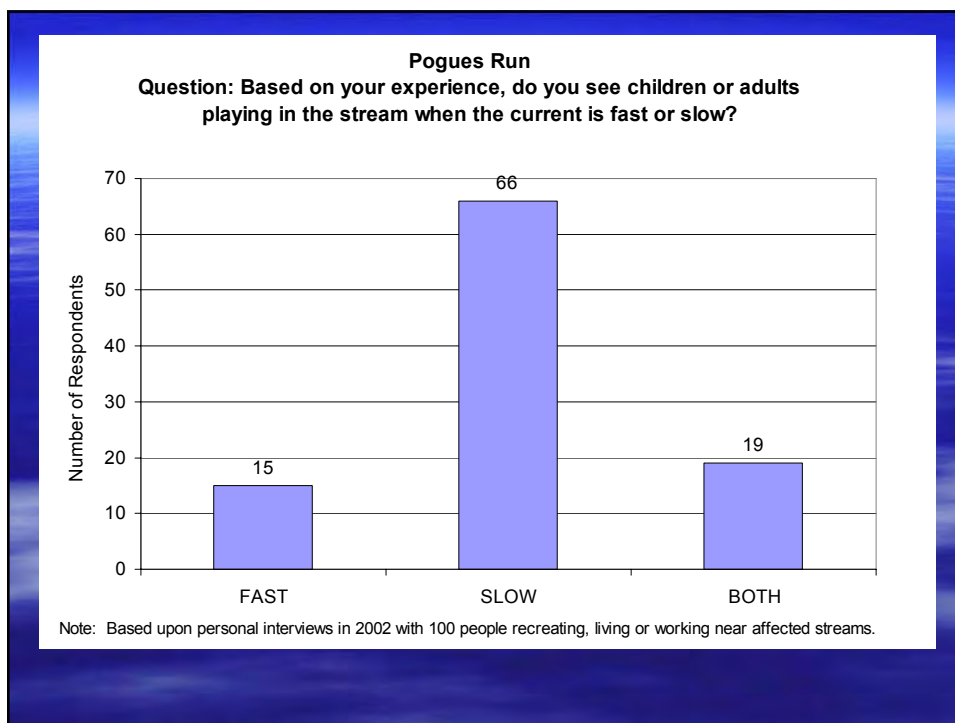
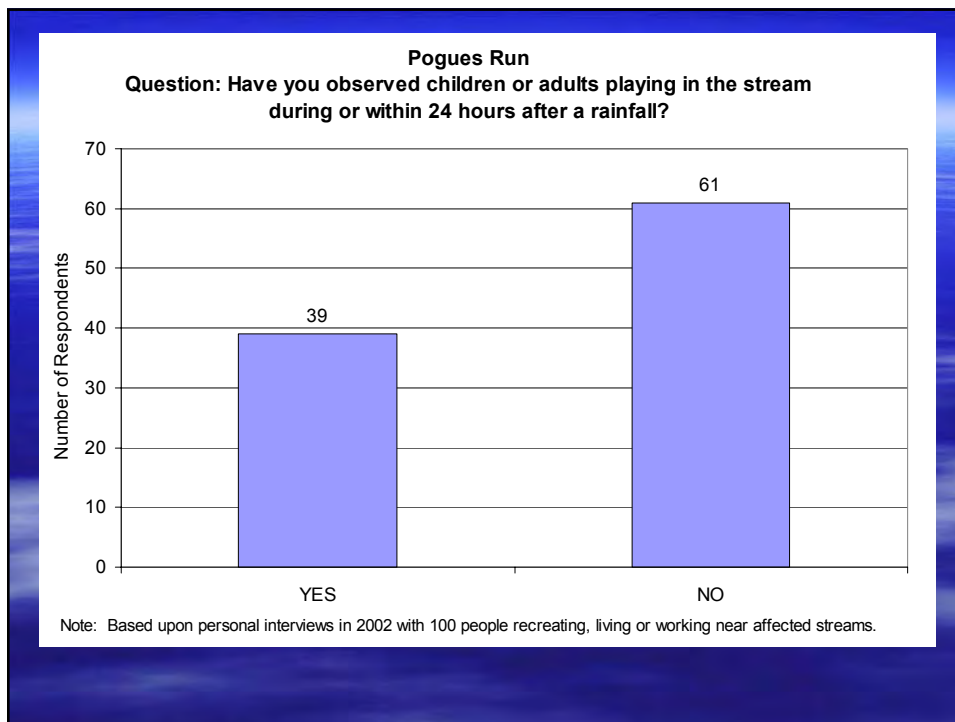
Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

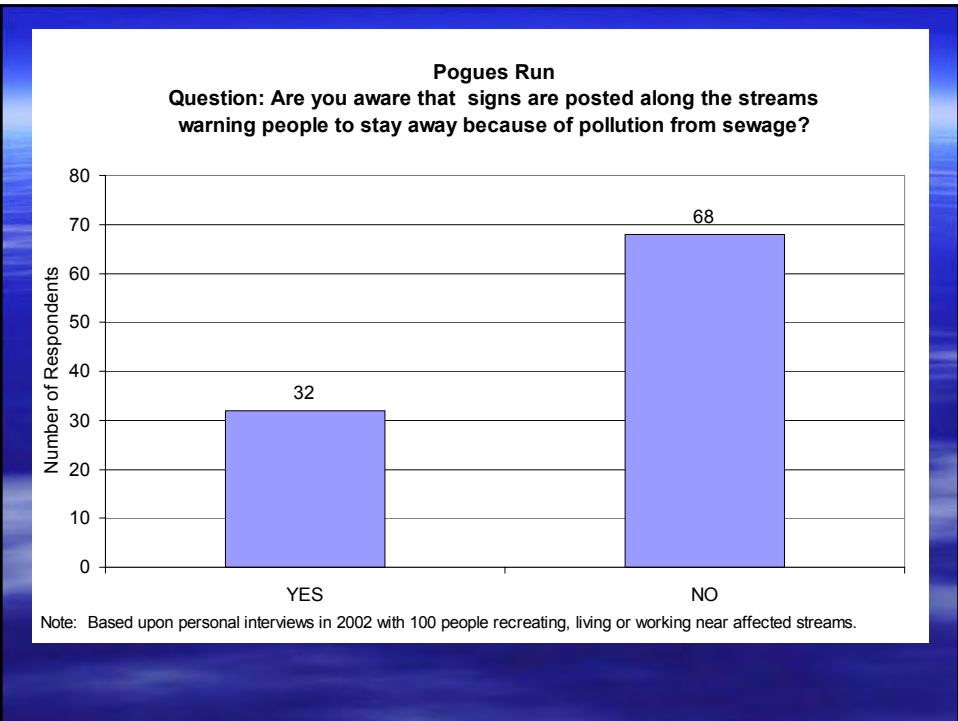
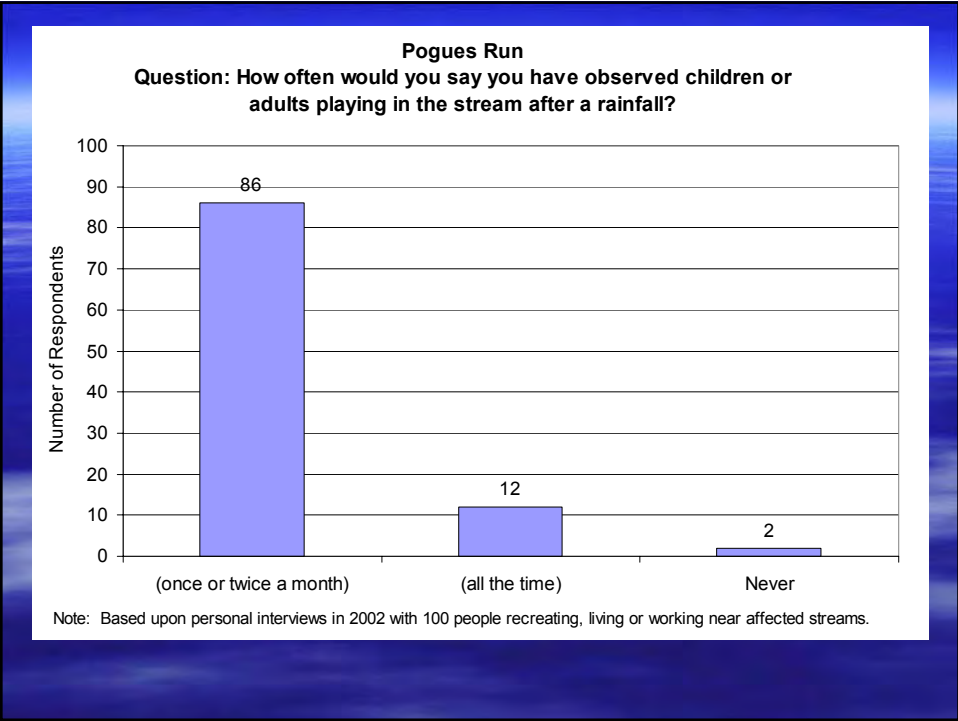
Pogues Run

Question: Also, who in your family uses the stream most frequently?

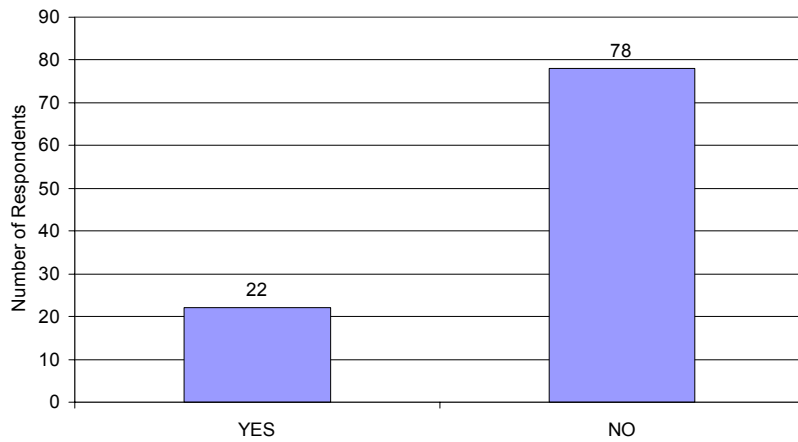


Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.





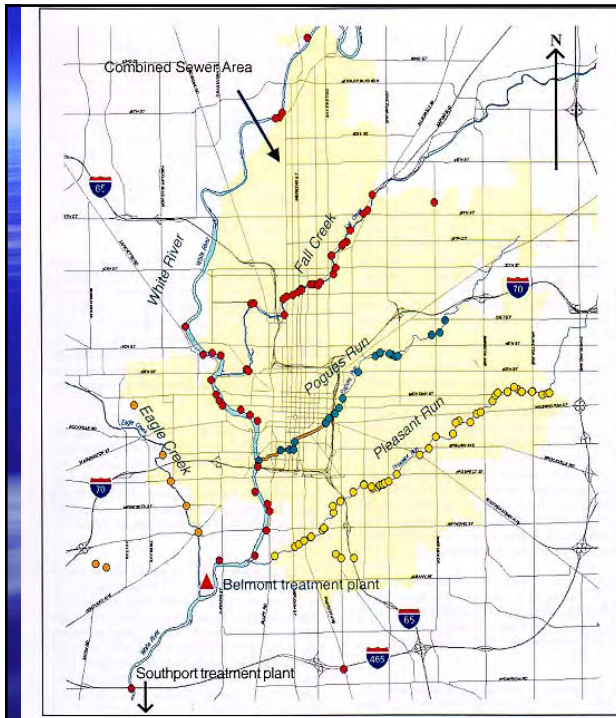
Pogues Run
Question: Have you noticed a change in the stream usage over the past 10 – 20 years?



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Location of Uses on Pogues Run

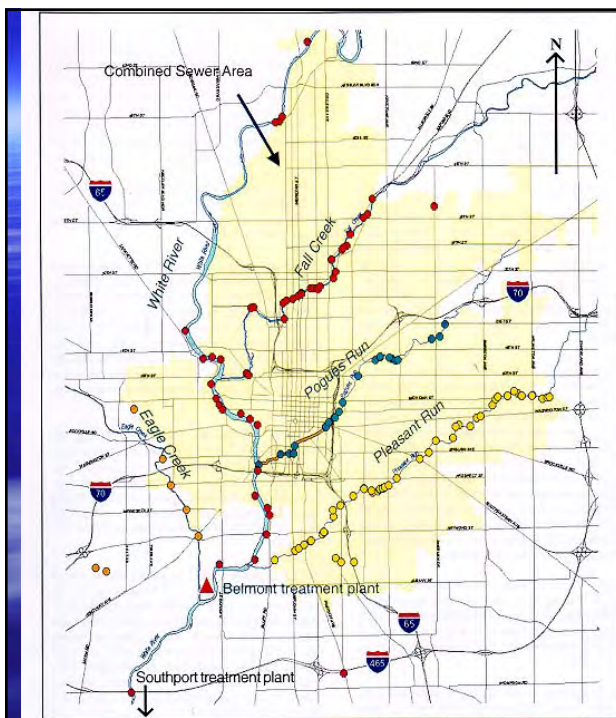
Activity	Location/Direct Respondent	Stream Survey	MCHD
PSB	Brookside Park Pool area		
PSB	Near Trail (Bridge)		
PSB	Spades Park		
PSB	Brookside Ave. to Nowland Ave.		
PSB	Nowland Ave. to Brookside Pkwy. South Drive		
PSB	Brookside Park near Rural	X	X
PSB	10 th & Arsenal Ave.	X	X
PSB	New York St. (at Pogue's Run)	X	X



POGUES RUN:
Location Activity
Direct Respondent

Activity Cluster: New York to Rural.

1. Brookside and 10th St. and Brookside Park key areas for playing at the stream.
2. Stream access depth and close proximity to schools and parks promotes familiarity and use.
3. Kids are attracted to the water.
4. Respondents asked for symbol "no" use signs, given the potential of language barriers.



POGUES RUN:
Location Activity
Direct Respondent

- PSB Brookside Park Pool area (Near 16th & Sherman Dr.)
- PSB Spades Park
- PSB Brookside Ave. to Nowland Ave.
- PSB Nowland Ave. to Brookside Pkwy. South Drive
- PSB † * Brookside Park near Rural
- PSB † * 10th & Arsenal Ave.
- PSB † * New York St.

PSB=Playing at Stream Bank

- † Reported on Stream Survey.
- * Reported to MCHD.

FINAL Survey Results - Pogues Run

In a typical year, how often have you or any member of your family come into water contact with POGUES RUN?

	Total Number	%
Less than once a month	26	26%
Once a Month	12	12%
Twice a month	9	9%
Every week	30	30%
Other	23	23%
TOTALS	100	100%

What is your primary usage of this stream?

	Total Number	%
Walking/Jogging/Biking	52	52%
Boating/Canoeing	2	2%
Jet Skiing	0	0%
Water Skiing	1	1%
Fishing	20	20%
Swimming	0	0%
Wading	1	1%
Playing at stream bank	3	3%
Other	21	21%
TOTALS	100	100%

In addition to primary usage – please identify other ways you or those in your family use the stream.

	Total Number	%
Walking/Jogging/Biking	54	39%
Boating/Canoeing	3	2%
Jet Skiing	0	0%
Water Skiing	0	0%
Fishing	30	22%
Swimming	3	2%
Wading	6	4%
Playing at stream bank	13	9%
Other	28	20%
TOTALS	137	100%

Please identify the ways you have seen the stream used by others.

	Total Number	%
Walking/Jogging/Biking	85	35%
Boating/Canoeing	6	2%
Jet Skiing	3	1%
Water Skiing	4	2%
Fishing	26	11%
Swimming	24	10%
Wading	27	11%
Playing at stream bank	57	23%
Other	11	5%
TOTALS	243	100%

Also, who in your family uses the stream most frequently?

	Total Number	%
ADULTS	62	62%
CHILDREN	38	38%
TOTAL	100	100%

Have you observed children or adults playing in the stream during or within 24 hours after a rainfall?

	Total Number	%
YES	39	39%
NO	61	61%
TOTAL	100	100%

Based on your experience, do you see children or adults playing in the stream when the current is fast or slow?

	Total Number	%
FAST	15	15%
SLOW	66	66%
BOTH	19	19%
TOTALS	100	100%

How often would you say you have observed children or adults playing in the stream after a rainfall?

	Total Number	%
(once or twice a month)	86	86%
(all the time)	12	12%
Never	2	2%
TOTALS	100	100%

Are you aware that signs are posted along the streams warning people to stay away because of pollution from sewage?

	Total Number	%
YES	32	32%
NO	68	68%
TOTAL	100	100%

Age Group	Total Number	%
18-29	30	0%
30-39	35	273%
40-49	16	318%
50-59	8	145%
60+	11	73%
TOTAL	100	100%

Have you noticed a change in the stream usage over the past 10 – 20 years?

	Total Number	%
YES	22	0%
NO	78	28%
TOTAL	100	100%

INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Description of Marion County Streams

Pleasant Run

Criteria	092	091	090	089A ³	089	229 ³	088	228	087	227 ³	086
	PLRPSD and Ridgeview Dr.	PLRPSD and Kenmore Rd.	Lowell Ave. and Sheridan Ave.	PLRPND and Arlington Ave.	PLRPND and Arlington Ave.	PLRPND and Arlington Ave.	PLRPND and Graham Ave.	Michigan St. and Graham Ave.	PLRPND and Audubon Ave.	PLRPND and Audubon Ave.	PLRPND and Ritter Ave.
Overflows per year (average) ¹	<1	8	<1	10	25	3	1	<1	32	29	<1
Annual Overflow Volume Range (MG/year) ¹	<1	<1	<1	<1	2-3	1-1	<1	<1	8-11	<1	<1
Other Discharges											
Location											
Type											
Factors that support/encourage recreational use											
School	no	no	no	no	no	no	no	no	no	no	no
Park	no	no	no	no	no	yes	no	no	no	yes	yes
Trail	yes	no	trail leading to stream	golf course paths	golf course paths	no	no	no	no	no	yes
Other	golf course	golf course		church next to it					bus stop		viaduct
Factors that prohibit/discourage recreational use											
Warning Signs/City Ordinance ²	yes	painted over	painted over	yes	could not locate	yes	could not locate	could not locate	yes	could not locate	yes
Fence	no	no	no	no	gate and bridge	no	no	no	no	no	no
Steep Banks	yes	yes	no	no	no	no	yes	yes	gradual	no	no
Other			no		no	Dense Vegetation	heavy woods	heavy woods	wooded, concrete structure	dense vegetation	some rocks
Access											
North Bank	Moderately Difficult	Moderately Difficult	Moderately Difficult	Moderately Difficult	Extremely Difficult	Moderately Difficult		Extremely Difficult		Moderately Difficult	
South Bank	Extremely Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult	Extremely Difficult	Moderately Difficult		Extremely Difficult		Easy, backyard	
Stream's Physical Attributes											
Depth	6 inch.	6 inch.	6 inch.	12 inch.	6 inch.	6 inch.	~ 3 inch.	~ 3 inch.	< 1 inch	NA	< 1 inch
Velocity	slow	slow	slow	slow	slow	quick	very slow	very slow	very slow	NA	very slow
Width	20-25 ft.	20-25 ft.	20-25 ft.	30 ft.	20-25 ft.	25 ft.	20 ft.	20 ft.	20 ft.	NA	20 ft.
Substrate	some rocks/sand	some rocks/sand	some rocks/sand	sandy	some rocks/sand	rocky	pebbles	pebbles	pebbles		pebbles
Safety	OK	OK	OK	OK	OK		OK	OK	OK		OK
Land Use											
Public	yes, golf course	yes, golf course	yes, golf course	yes, golf course	yes, golf course	yes	no	no	no	yes	yes
Residential/Wooded	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
Industrial/Commercial	no	no	no	no	no	no	no	no	no	no	no
Stream Use											
Habitat for Aquatic Species											
Natural riparian	yes	yes	yes	yes	yes	yes	yes	yes	yes		yes
Partially Developed (Subdivision)											
Fully Urbanized Development											
Other Comments										side channel with no flow	

- Notes:
- 1. Overflows per year and volume range were revised June 2004.
 - 2. New bilingual warning signs are being placed at all CSO locations.
 - 3. The data for this CSO was collected in June 2004.
 - 4. Pictures not taken by CSO, additional river pictures.

INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Description of Marion County Streams

Pleasant Run

Criteria	085	084 ³	154	083	224	081	080	079	226	078	077
	PLRPND and Ritter Ave.	PLRPND and Michigan St.	PLRPND and Michigan St.	Hawthorne Ln. and Lowell Ave.	PLRPND and Washington St.	PLRPND and Riley Ave.	PLRPND and Wallace Ave.	PLRPND and Linwood Ave.	PLRPND and Colorado Ave.	PLRPND and Brookville Rd.	PLRPND and Sherman Ave.
Overflows per year (average) ¹	23	28	27	<1	2	<1	29	Eliminated (April 2001)	Eliminated (September 2001)	31	1
Annual Overflow Volume Range (MG/year) ¹	4-5	32-43	9-12	<1	<1	<1	15-20			11-15	<1
Other Discharges											
Location											
Type											
Factors that support/encourage recreational use											
School	no	no	no	no	no	Howe M.S.	Howe H.S.	no	no	no	no
Park	no	yes	yes	no	no	no	no	yes	no	no	yes, ball field
Trail	no	yes	no	leading to stream	yes	no	yes	no	yes	yes	no
Other											
Factors that prohibit/discourage recreational use											
Warning Signs/City Ordinance ²	yes	yes	yes	yes	yes	yes	yes	could not locate	could not locate	yes	yes
Fence	no	no	no	no	no	no	no	no	no	no	no
Steep Banks	yes	no	yes	no	yes	gradual	no	yes	yes	gradual	yes
Other	no		heavy woods	wooded area	rocky	wall	no			heavy woods	heavy woods
Access											
North Bank		Easy							Extremely Difficult		
South Bank		Easy							Extremely Difficult		
Stream's Physical Attributes											
Depth	< 1 inch	6 inch.	6 inch.	< 6 inch.	1 ft.	1 ft.	< 6 inch.	1 ft.	< 1 inch	1 ft.	6 inch.
Velocity	very slow	quick	slow	slow	slow	slow	slow	slow	slow	slow	slow
Width	20 ft.	20 ft.	20 ft.	20 ft.	20 ft.	20 ft.	20 ft.	20 ft.	20 ft.	20 ft.	20 ft.
Substrate	pebbles	rocky	pebbles	some sand, some rocks	mossy rocks	mossy rocks	some sand, some rocks	rocky	rocks, concrete	rock, concrete	rock, concrete
Safety	OK	OK	OK	OK	no	no	OK	no	OK	OK	OK
Land Use											
Public	yes	yes	no	no	yes	yes	yes	no	yes	no	yes
Residential/Wooded	yes	yes	yes	yes	no	yes	yes	yes	no	yes	yes
Industrial/Commercial	no	no	no	no	commercial	no	no	no	no	no	no
Stream Use											
Habitat for Aquatic Species											
Natural riparian	yes	yes	yes	yes	yes		yes	yes	yes	yes	yes
Partially Developed (Subdivision)						yes					
Fully Urbanized Development											
Other Comments											

Notes:

1. Overflows per year and volume range were revised June 2004.

2. New bilingual warning signs are being placed at all CSO locations.

3. The data for this CSO was collected in June 2004.

4. Pictures not taken by CSO, additional river pictures.

INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Description of Marion County Streams

Pleasant Run

076	Criteria	075	074	073	072	107	108	109	031 ³	106 ³	030
PLRPSD and English Ave.		PLRPND and Southeastern Ave.	PLRPND and Prospect St.	PLRPND and Keystone Ave.	PLRPND and Saint Peter St.	PLRPND and Saint Paul St.	PLRPSD and Saint Paul St.	PLRPND and Churchman Ave.	PLRPSD and Chruchman Ave.	PLRPND and Orange St.	PLRPSD and Randolph St.
29	Overflows per year (average) ¹	23	<1	27	4	11	26	3	4	6	<1
28-37	Annual Overflow Volume Range (MG/year) ¹	5-7	<1	9-13	<1	13-18	4-5	<1	1-2	<1	<1
	Other Discharges		2		2						
	Location		DS of CSO								
	Type										
	Factors that support/encourage recreational use										
no	School	no	no	no	no	no	no	no	no	no	yes, #20
no	Park	no	no	no	no	no	no	no	no	yes	no
by bridge	Trail	no	no	no	yes	yes	no	yes	yes	yes	no
	Other										
	Factors that prohibit/discourage recreational use										
yes	Warning Signs/City Ordinance ²	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
no	Fence	no	no	no	no	no	no	no	no	no	no
no	Steep Banks	yes	yes, concrete walls	yes, concrete along bridge	no	gradual	yes	yes	yes, north side	yes	yes
	Other	very rocky		heavy woods	heavy woods			dense vegetation			dense vegetation
	Access										
	North Bank		Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult		Extremely Difficult	Moderately Difficult	Extremely Difficult
	South Bank		Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult		Moderately Difficult	Moderately Difficult	Extremely Difficult
	Stream's Physical Attributes										
1 ft.	Depth	6 inch. - 1 ft.	?	1 ft.	1-2 ft.	6 inch.	6 inch.	6 inch.	2 inch.	< 6 inch.	< 6 inch.
slow	Velocity	slow	1-2 fps	slow	slow	slow	slow	slow	slow	slow	slow
20 ft.	Width	10 ft.	10-25 ft.	20 ft.	20 ft.	20-25 ft.	20-25 ft.	20-25 ft.	20 ft.	20 ft.	20 ft.
rocky	Substrate	some sand/some rocks	rocks	some sand/some rocks	some sand/some rocks	small rocks, rocks DS	rocky	rocky	rocky	rocky	rocky
OK	Safety	dangerous getting down to stream	no	OK	no, slippery rocks	OK	no	no			no
	Land Use										
no	Public	no	no	no	yes	no	no	no	yes	yes	yes
yes	Residential/Wooded	no	no	yes	yes	yes	yes	yes	yes	yes	yes
commercial	Industrial/Commercial	yes	yes	commercial	no	no	no	no	no	no	no
	Stream Use										
	Habitat for Aquatic Species										
yes	Natural riparian	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
	Partially Developed (Subdivision)										
	Fully Urbanized Development										
	Other Comments										

Notes:

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3. The data for this CSO was collected in June 2004.

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INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Description of Marion County Streams

Pleasant Run

029	Criteria	028	127	027	025	023	119	151	149	022	150
Orange St. and Randolph St.		PLRPND and State St.	1325 S. State and Pleasant Run	PLRPSD and Cottage Ave.	PLRPND and Shelby St.	PLRPND and Iowa St.	PLRPSD and Beecher St.	PLRPND and Beecher St.	PLRPSD and Garfield Dr.	PLRPSD and Raymond St.	PLRPND and Raymond St.
6	Overflows per year (average) ¹	10	4	4	10	7	11	42	8	12	56
<1	Annual Overflow Volume Range (MG/year) ¹	2-3	<1	1-2	3-4	2-3	14-19	6-9	20-27	11-15	23-31
	Other Discharges										
	Location										
	Type										
	Factors that support/encourage recreational use										
no	School	no	no	no	no	no	no	no	no	no	no
yes, Orange park	Park	no	no	yes	no	no	no	no	yes	yes	yes
yes	Trail	no	no	no	no	no	yes	yes	yes	yes	yes
	Other										no
	Factors that prohibit/discourage recreational use										
yes	Warning Signs/City Ordinance ²	yes	yes	yes	could not locate	yes	yes	yes	yes	yes	yes
no	Fence	no	no	no	no	no	guard rail	no	no	no	no
gradual	Steep Banks	yes	yes	yes	yes	no	gradual	yes	no	no	no
	Other	wall	rocky	very rocky access	dense vegetation		dense vegetation	dense vegetation	rocks next to CSO and along bank		rocks
	Access										
Extremely Difficult	North Bank	Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult		Moderately Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult
Extremely Difficult	South Bank	Extremely Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult		Extremely Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult	Moderately Difficult
	Stream's Physical Attributes										
< 6 inch.	Depth	6 inch.	6 inch.	6 inch.	6 inch.	6 inch. - 1 ft.	1 ft.	6 inch - 1 ft.	2 ft.	1 ft.	1-2 ft.
slow	Velocity	slow	slow	slow	~ 1 fps	slow	~ 1 fps	~ 2 fps	very slow	~ 1 fps	slow
20 ft.	Width	25 ft.	25 ft.	25 ft.	20 ft.	12-20 ft.	20-25 ft.	20-25 ft.	20-25 ft.	20 ft.	20 ft.
rocky	Substrate	rocky	rocky	rocky	rocky	sand/some rocks	rocky	rocky	sandy, small rocks	rocky	sandy, small rocks
no	Safety	no	no	no	no	OK	no	no	no	no	OK
	Land Use										
yes	Public	yes	yes	no	yes	no	yes	yes	yes	yes	yes
yes	Residential/Wooded	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
no	Industrial/Commercial	no	no	no	no	no	no	no	no	no	no
	Stream Use										
	Habitat for Aquatic Species										
yes	Natural riparian	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
	Partially Developed (Subdivision)										
	Fully Urbanized Development										
	Other Comments										

- Notes:
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 - 2. New bilingual warning signs are being placed at all CSO locations.
 - 3. The data for this CSO was collected in June 2004.
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INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Description of Marion County Streams

Pleasant Run

Pleasant Run via Bean Creek

021	Criteria	130	148	020	019	120	017	016	015
PLRPND and Ransdall St.		Manual High School	PLRPND and Madison Ave.	PLRPND and Pennsylvania St.	PLRPND and Meridian St.	PLRPND and Southern Ave.	Boyd Ave. and Nelson Ave.	Shelby St. and Willow Dr.	Southern Ave. and Manker Ave.
28	Overflows per year (average) ¹	1	22	13	3	24	8	21	10
35-48	Annual Overflow Volume Range (MG/year) ¹	<1	1-2	1-1	1-1	31-42	<1	6-9	4-6
	Other Discharges								
	Location							On Willow	
	Type							storm	
	Factors that support/encourage recreational use								
yes	School	yes, Manual H.S.	yes	no	no	no	no	no	no
no	Park	no	no	yes	no	no	no	no	yes
no	Trail	no	no	no	no	no	no	no	no
	Other						house		
	Factors that prohibit/discourage recreational use								
yes	Warning Signs/City Ordinance ²	yes	yes	yes	yes	could not locate	painted over	yes	yes
no	Fence	no	no	no	no	along Metal fabrication company property	no	yes	yes
gradual	Steep Banks	no	gradual	no	yes	no	no	no	yes
vegetation	Other	no	vegetation	dense vegetation	dense vegetation	vegetation	dense vegetation	dense vegetation	vegetation
	Access								
Extremely Difficult	North Bank	Extremely Difficult		Extremely Difficult	Extremely Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult
Easy	South Bank	Easy		Extremely Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult	Extremely Difficult	Moderately Difficult
	Stream's Physical Attributes								
1 ft.	Depth	1 ft.	1 ft.	6 inch. - 1 ft.	1-2 ft.	1-2 ft.	6 inch. - 1 ft.	6 inch.	6 inch.
slow	Velocity	slow	very slow	very slow	very slow	slow	very slow	very slow	very slow
15-20 ft.	Width	15-20 ft.	20 ft.	15-20 ft.	15-25 ft.	20 ft.	15-20 ft.	15-20 ft.	20 ft.
sand/some rocks	Substrate	sandy	sandy, small rocks	sand, rocks DS of CSO	small rock	some sand, some rocks	rocky	rocky	rocky
OK	Safety	OK	OK	OK	no	no	no	no	no
	Land Use								
yes	Public	yes	yes	no	yes	no	no	yes	no
yes	Residential/Wooded	yes	yes	yes	yes	no	yes	yes	yes
no	Industrial/Commercial	no	no	no	no	yes	no	no	no
	Stream Use								
	Habitat for Aquatic Species								
yes	Natural riparian	yes	yes	yes	yes	yes	yes		
	Partially Developed (Subdivision)							yes	yes
	Fully Urbanized Development								
	Other Comments								

- Notes:
- 1. Overflows per year and volume range were revised June 2004.
 - 2. New bilingual warning signs are being placed at all CSO locations.
 - 3. The data for this CSO was collected in June 2004.
 - 4. Pictures not taken by CSO, additional river pictures.



Figure 2-11a
Physical Stream Characteristics
Pleasant Run
Sheet 1 of 8

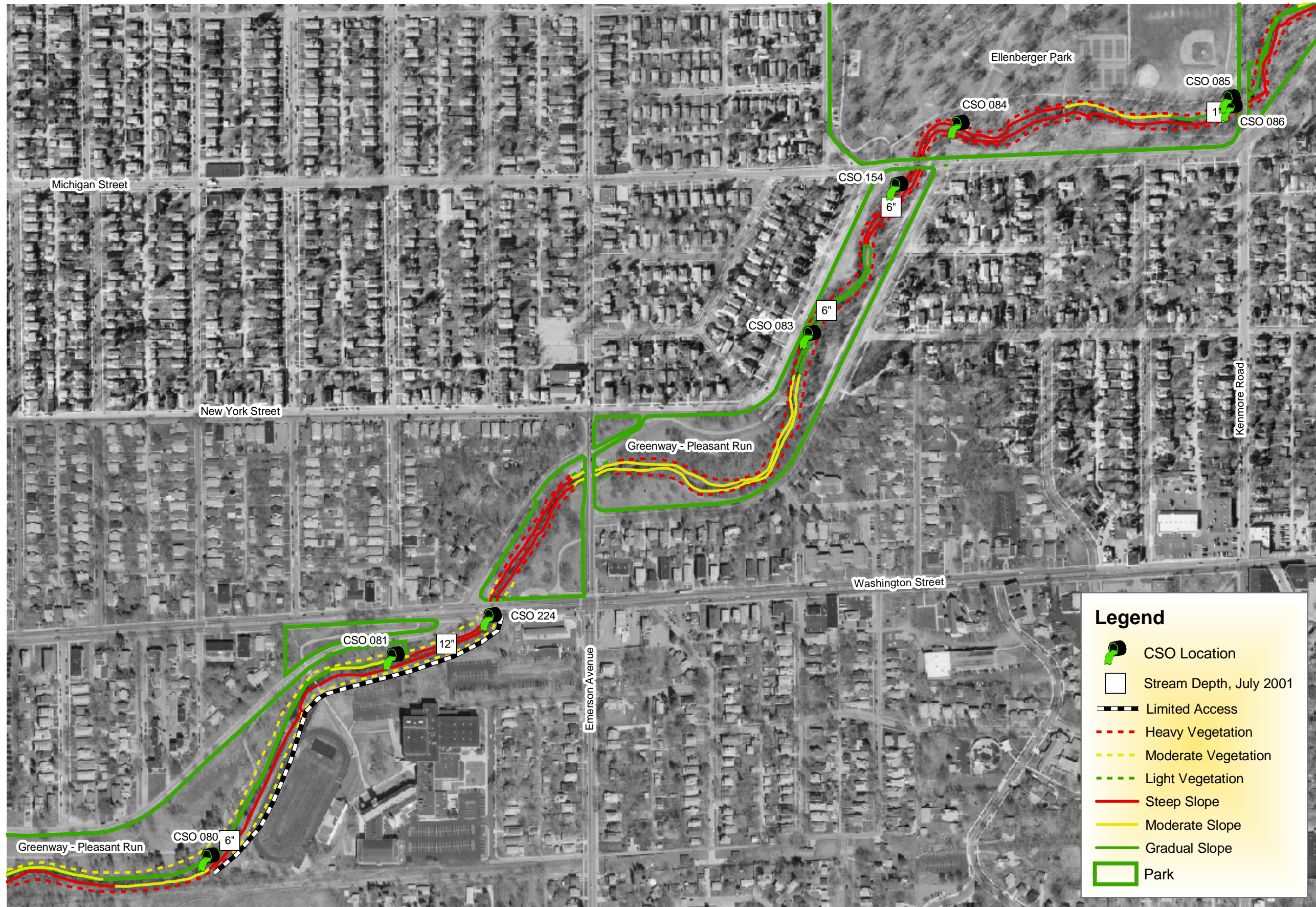


Figure 2-11b
Physical Stream Characteristics
Pleasant Run
Sheet 2 of 8



Legend











-  CSO Location
-  Stream Depth, July 2001
-  Limited Access
-  Heavy Vegetation
-  Moderate Vegetation
-  Light Vegetation
-  Steep Slope
-  Moderate Slope
-  Gradual Slope
-  Park

Figure 2-11c
Physical Stream Characteristics
Pleasant Run
Sheet 3 of 8

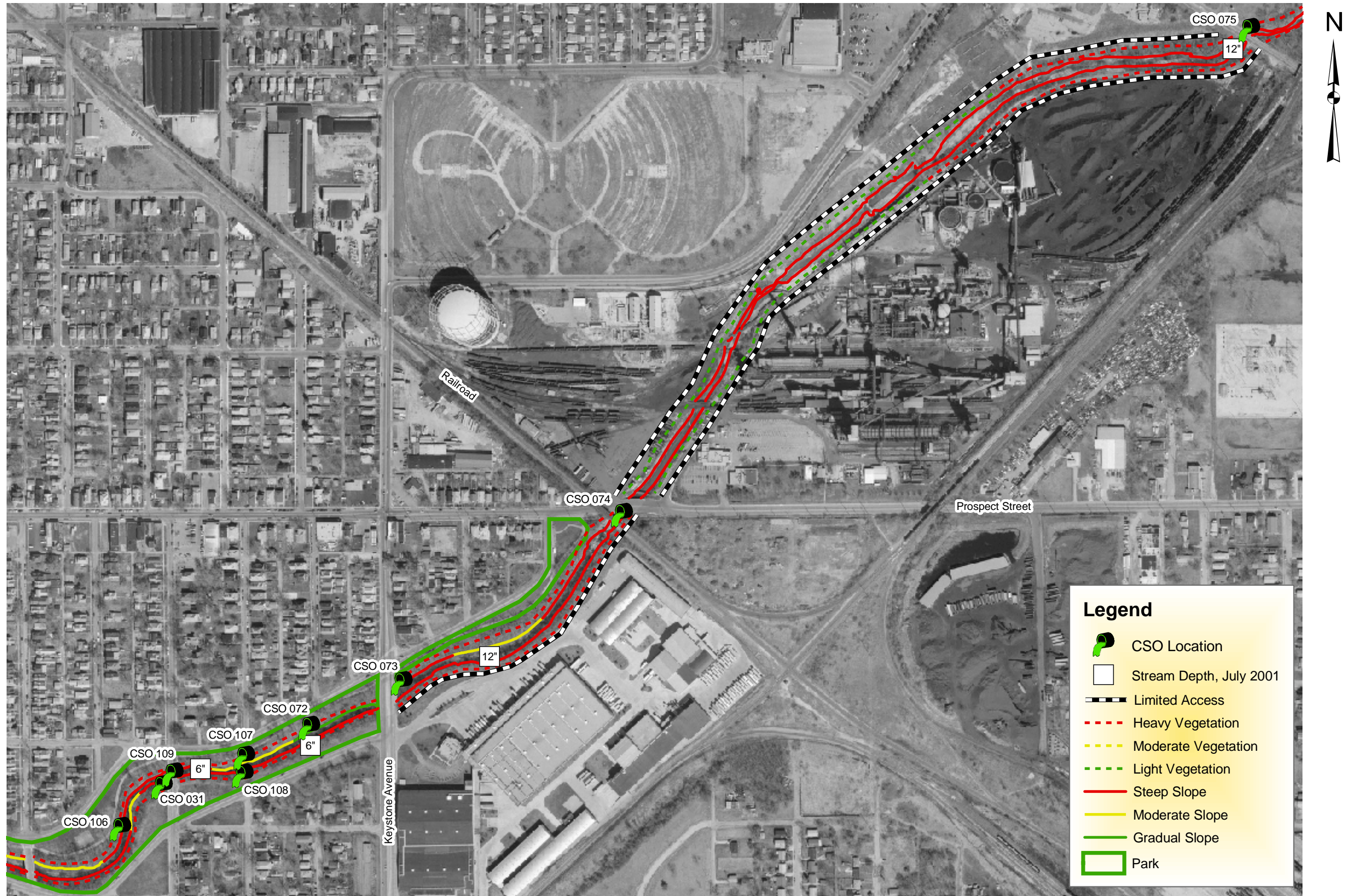


Figure 2-11d
Physical Stream Characteristics
Pleasant Run
Sheet 4 of 8

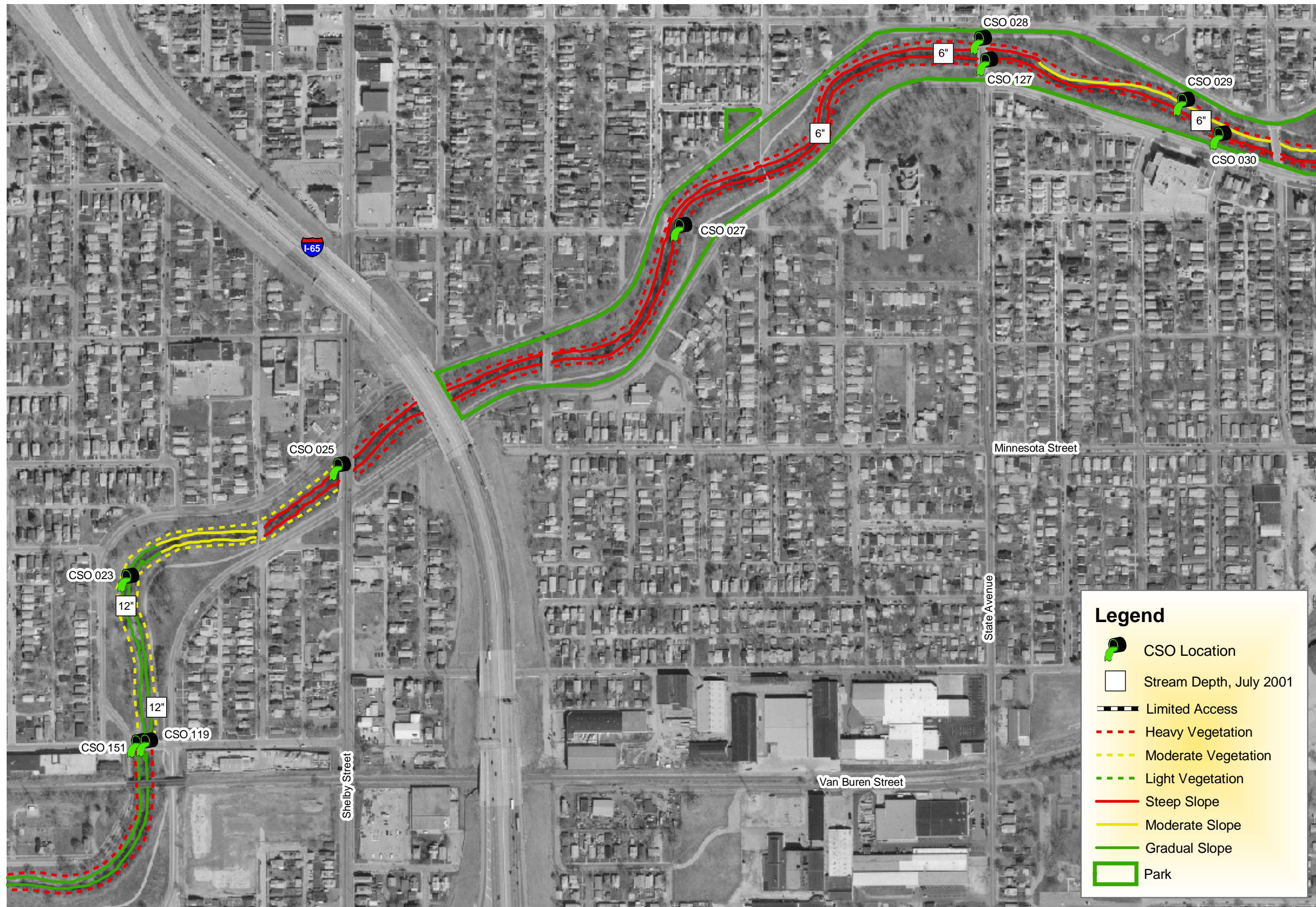


Figure 2-11e
Physical Stream Characteristics
Pleasant Run
Sheet 5 of 8



Figure 2-11f
Physical Stream Characteristics
Pleasant Run
Sheet 6 of 8



Figure 2-11g
Physical Stream Characteristics
Pleasant Run
Sheet 7 of 8

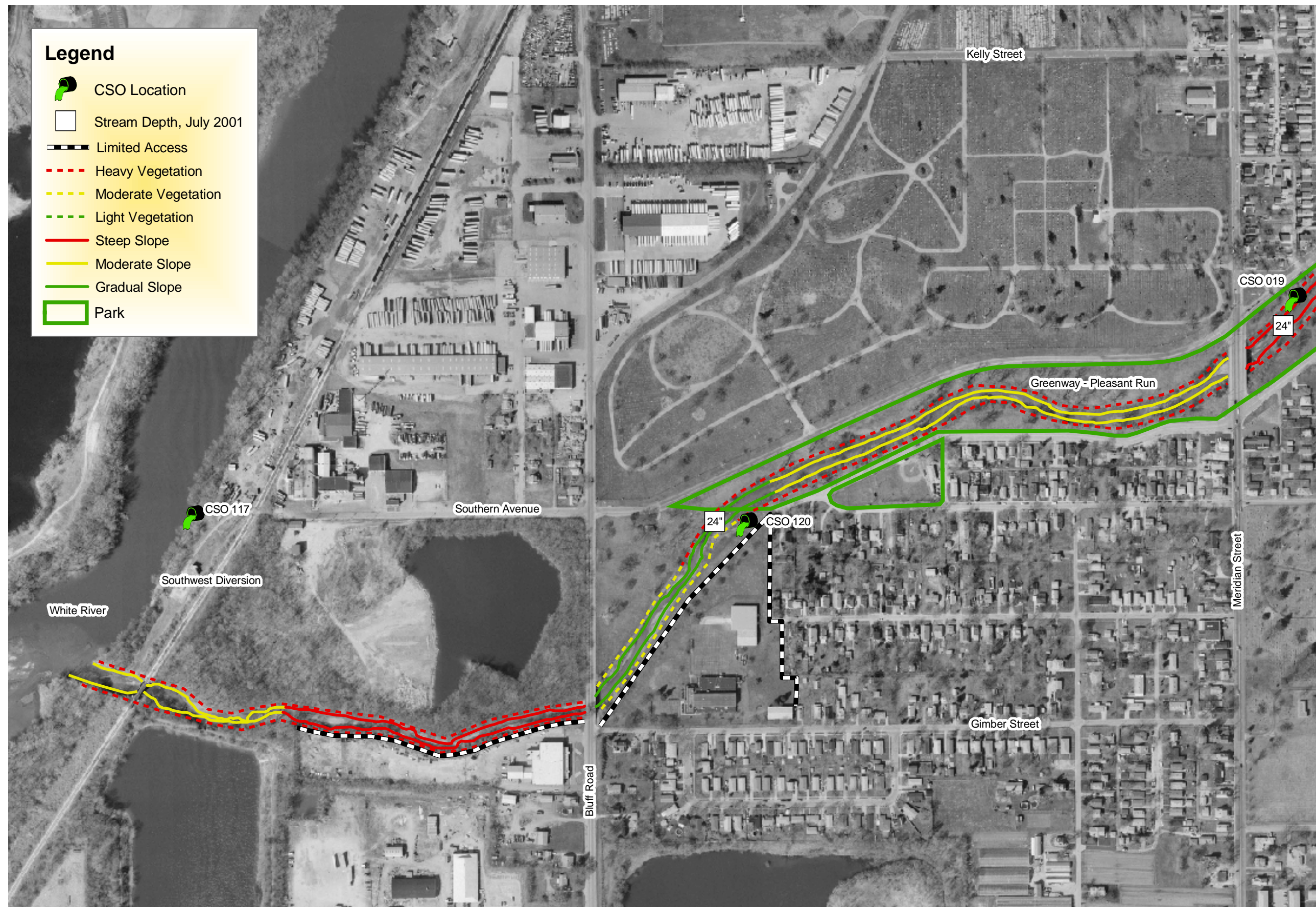
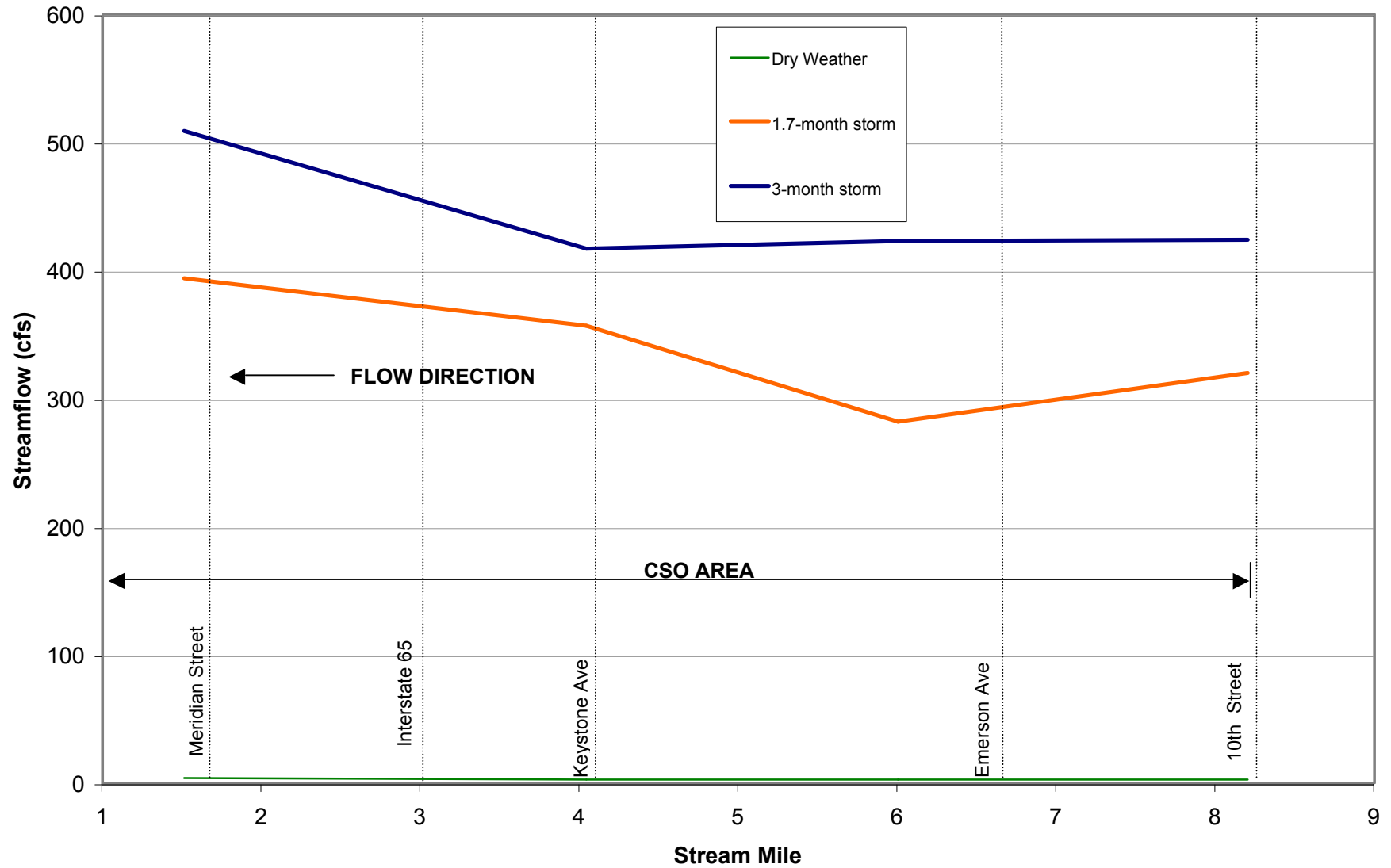
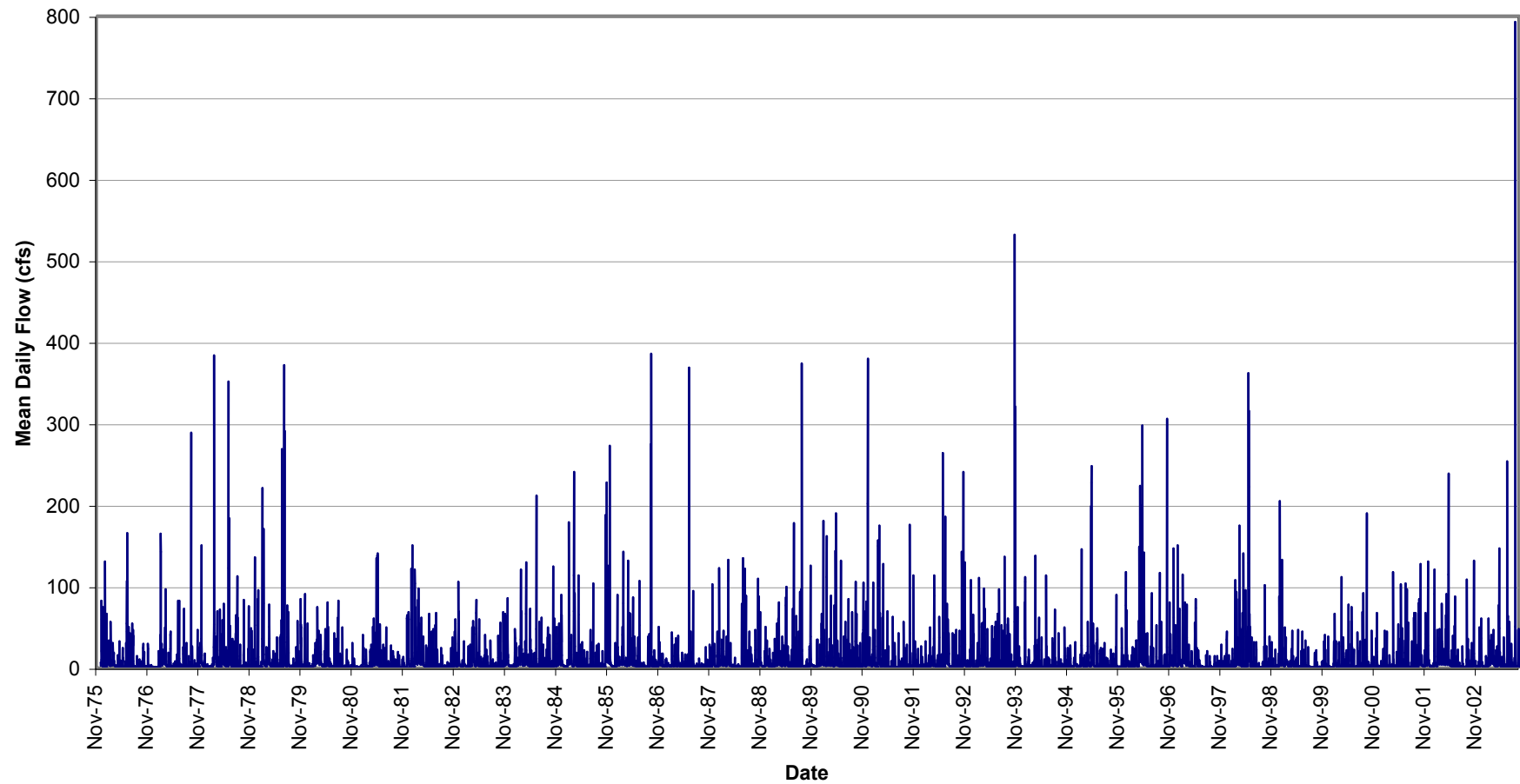


Figure 2-11h
Physical Stream Characteristics
Pleasant Run
Sheet 8 of 8

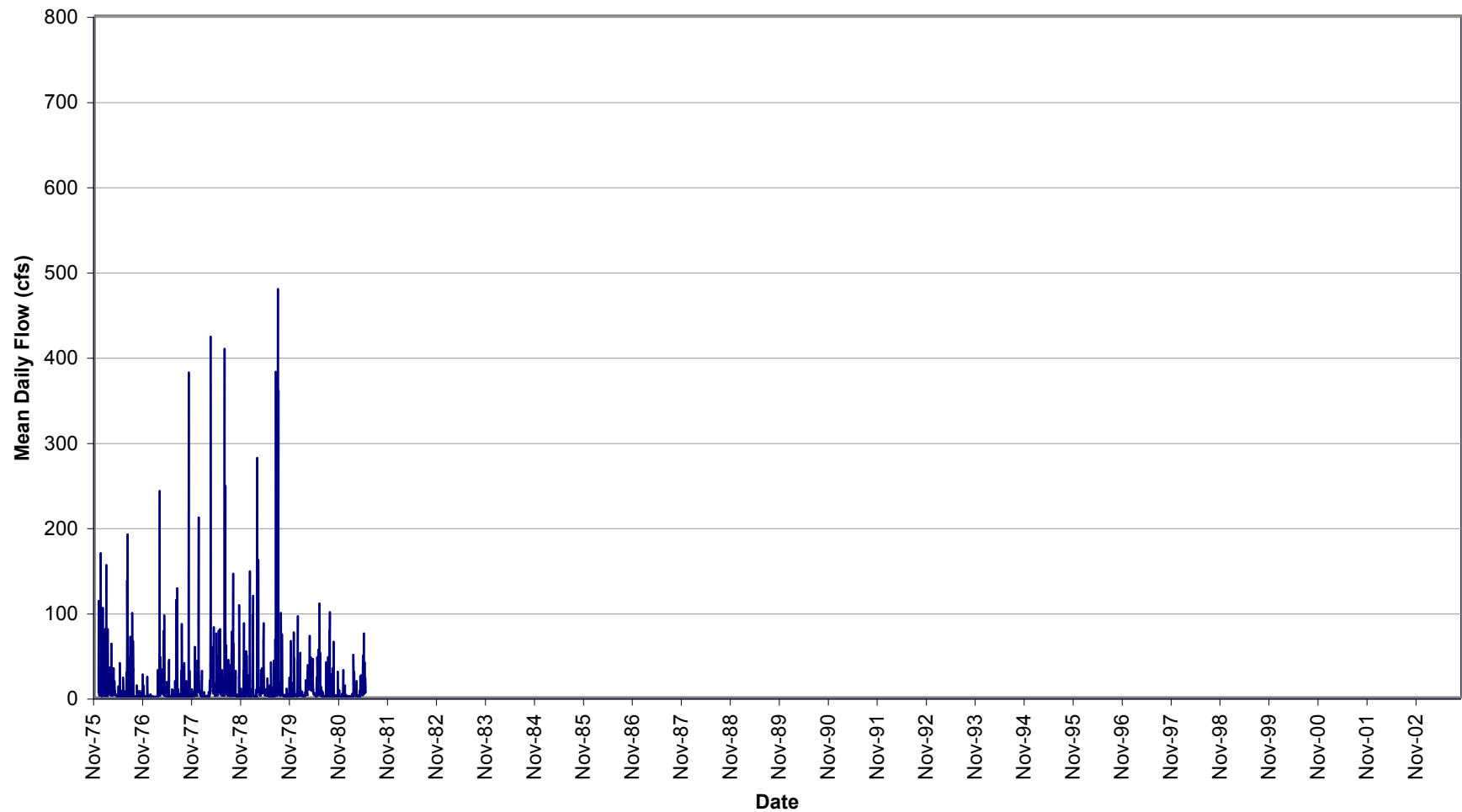
Modeled Maximum Streamflow in Pleasant Run





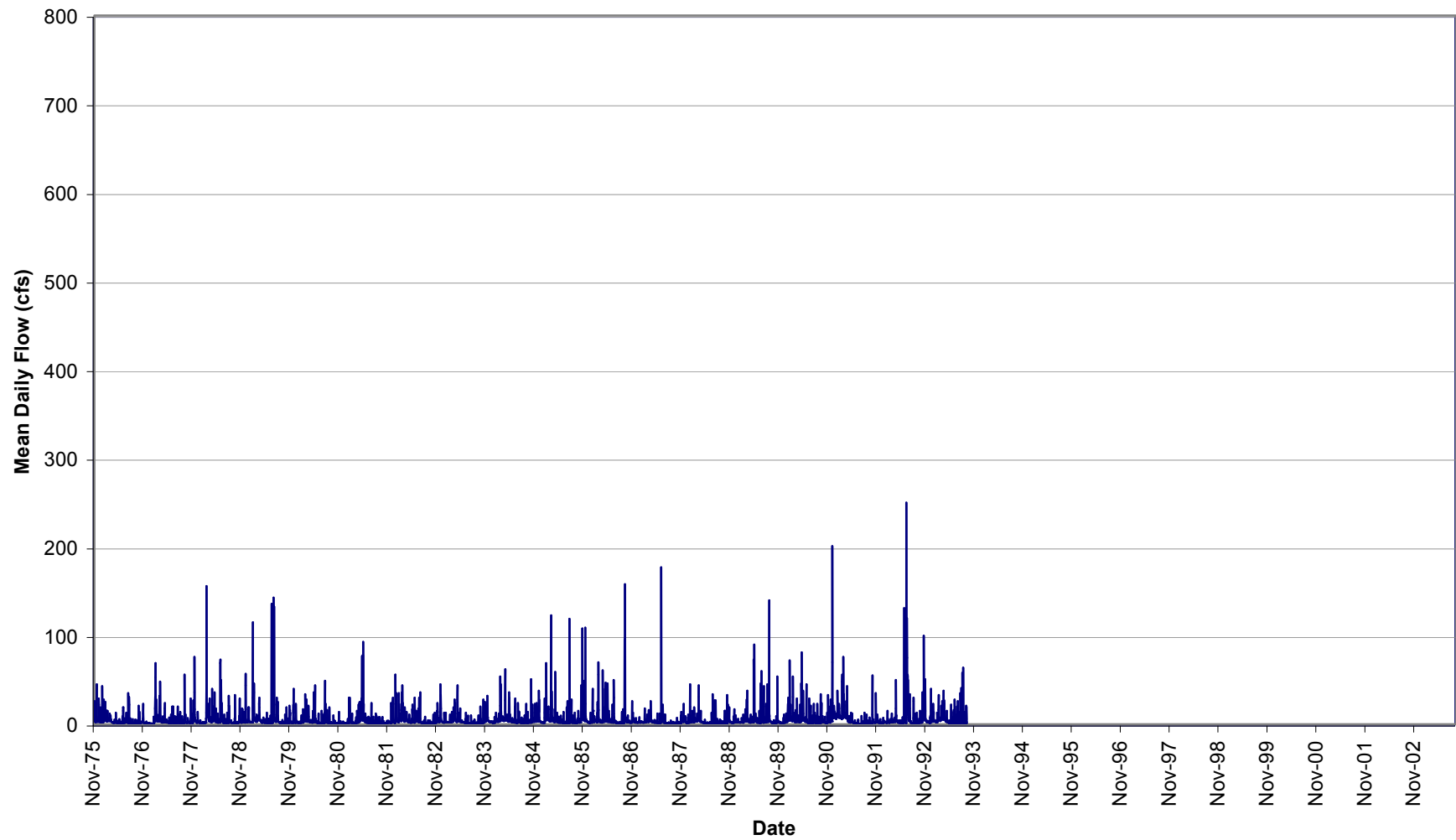
Source: USGS gauge station 03353120 in Pleasant Run at Arlington Avenue, November 28, 1975 to September 30, 2003.

Flow Variations in Pleasant Run at Arlington Avenue



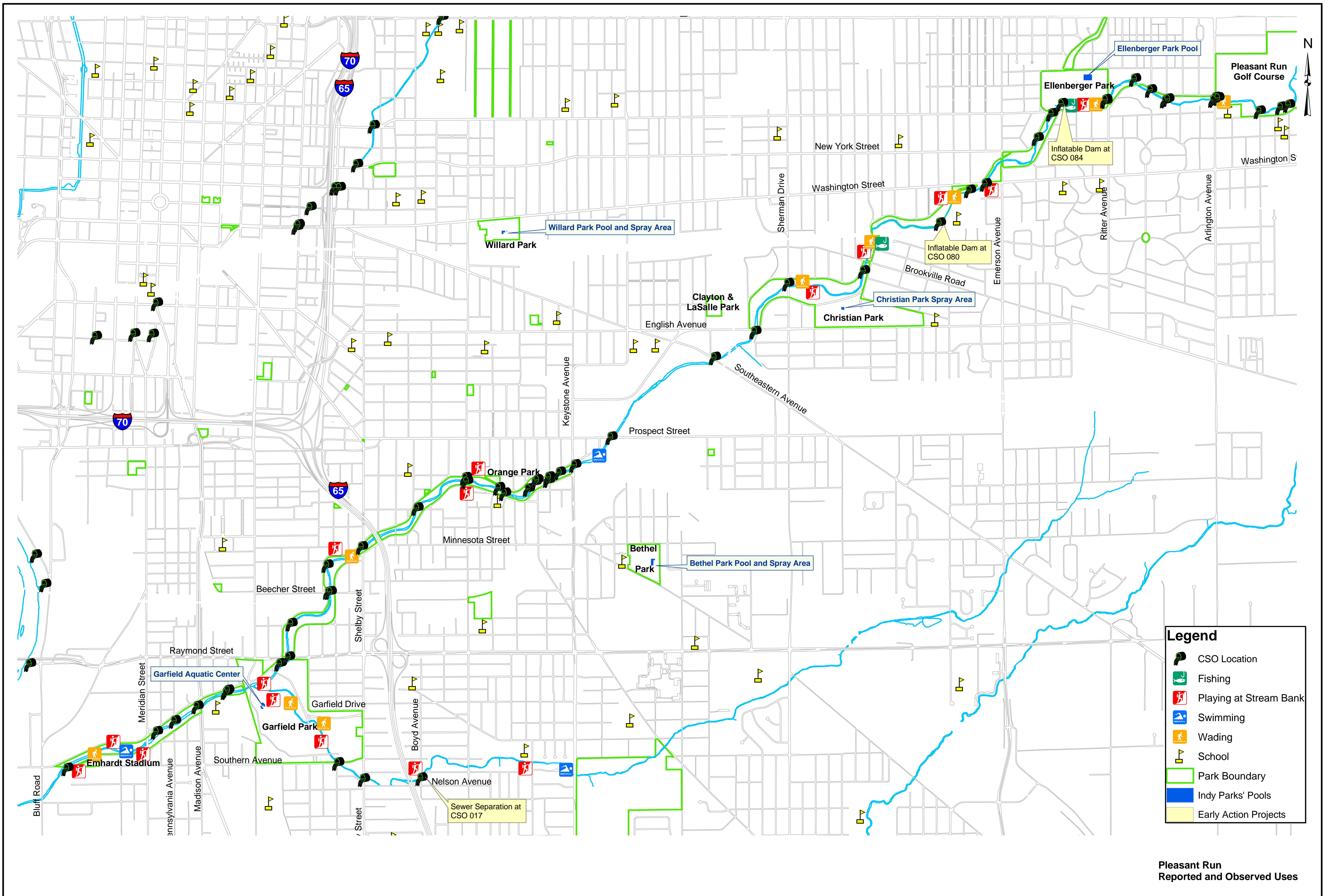
Source: USGS gauge station 03353160 in Pleasant Run at Brookville Road, November 28, 1975 to May 13, 1981. Data not available after September 30, 1993.

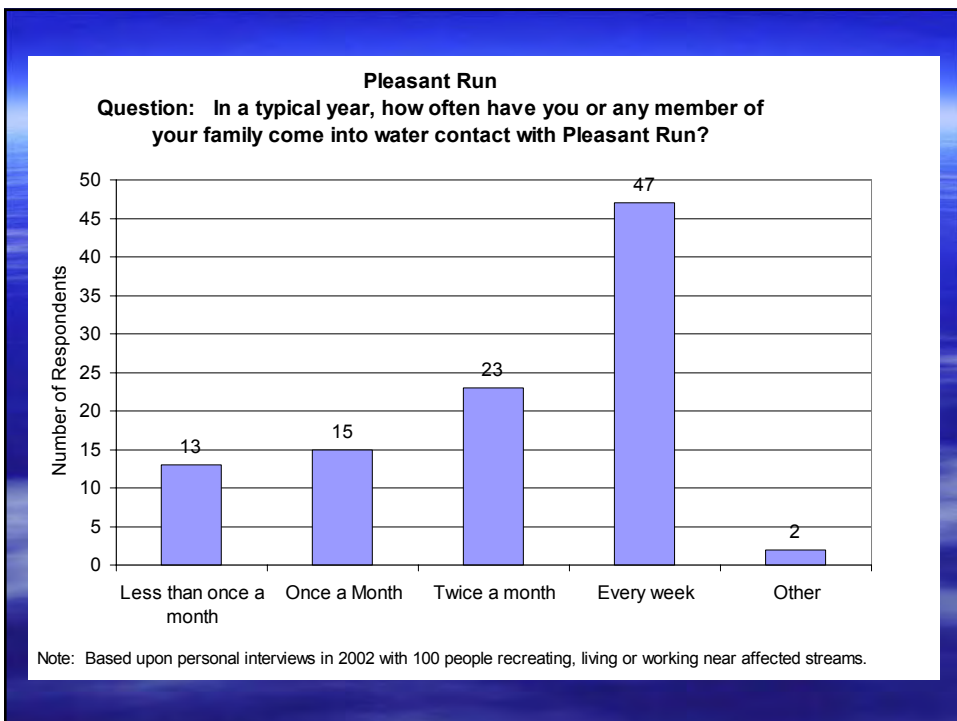
Flow Variations in Pleasant Run at Brookville Road

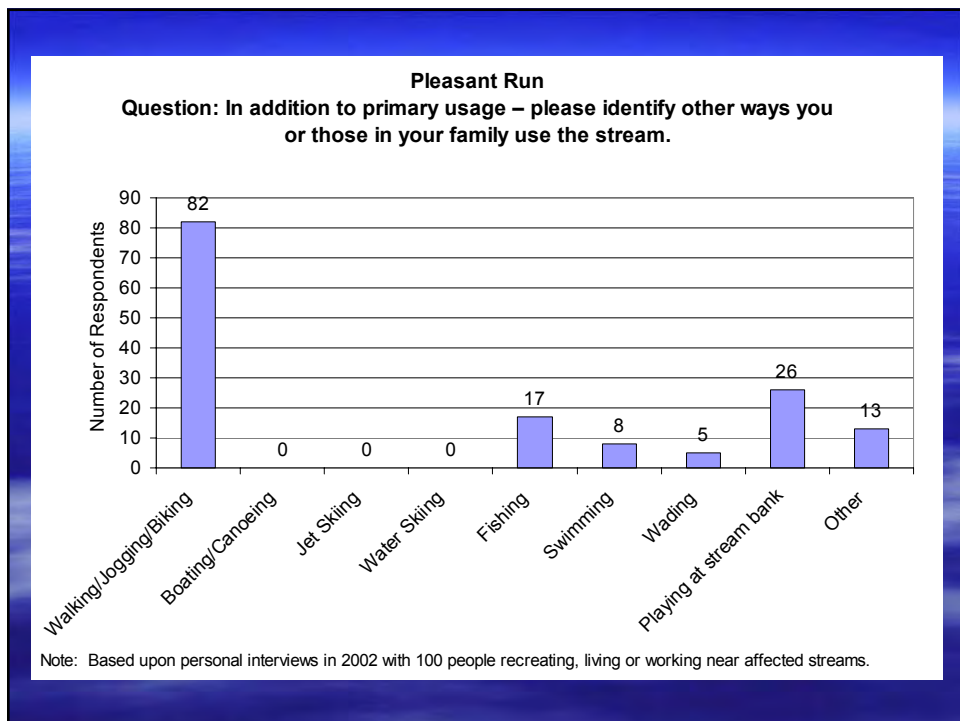
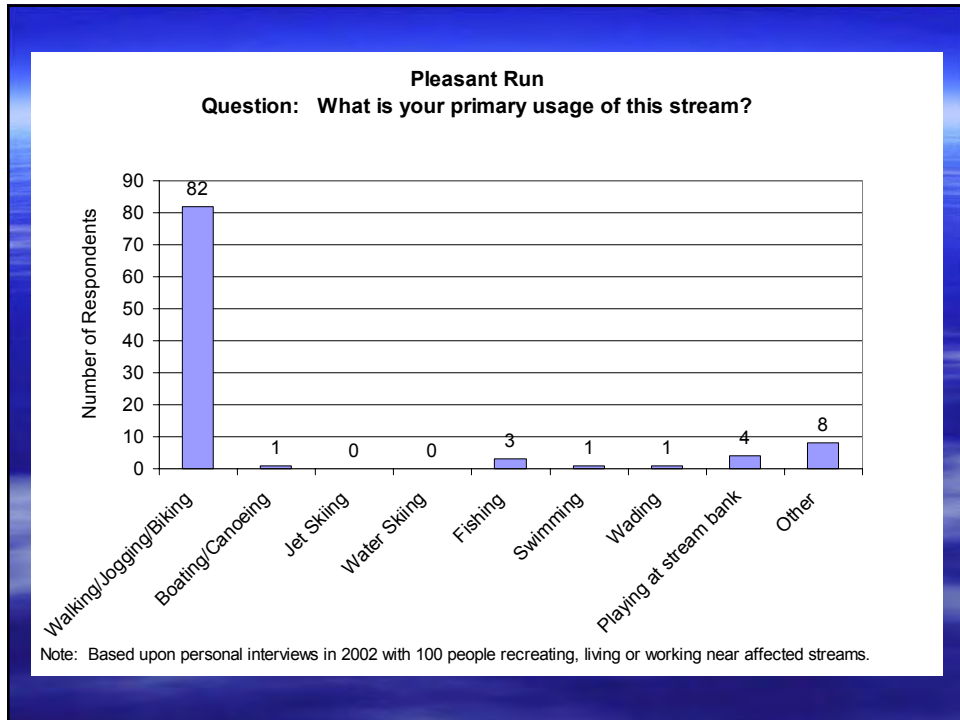


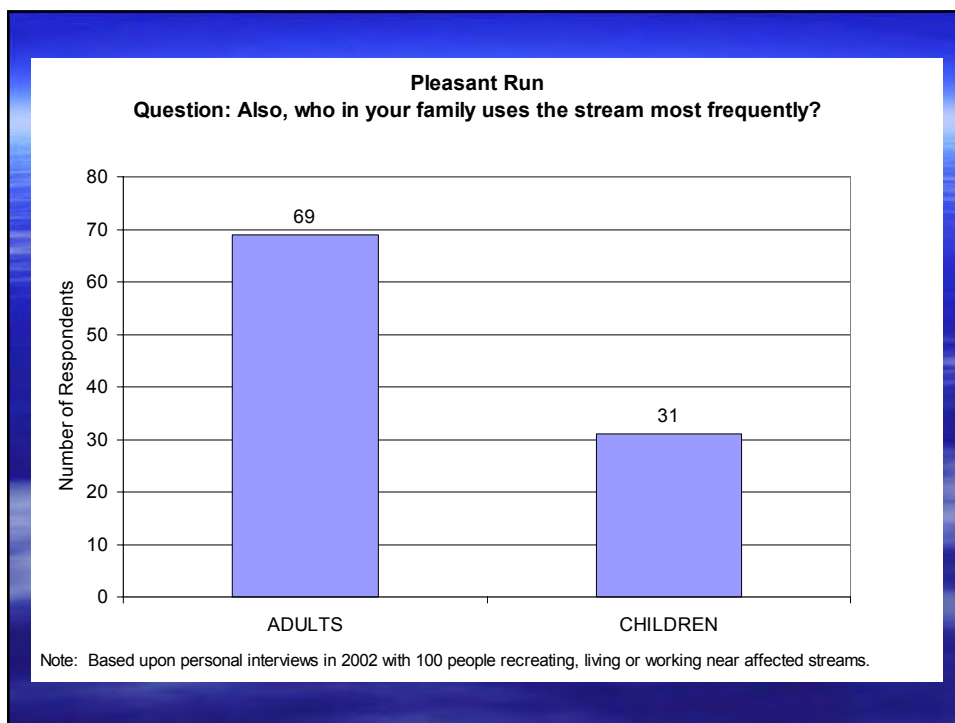
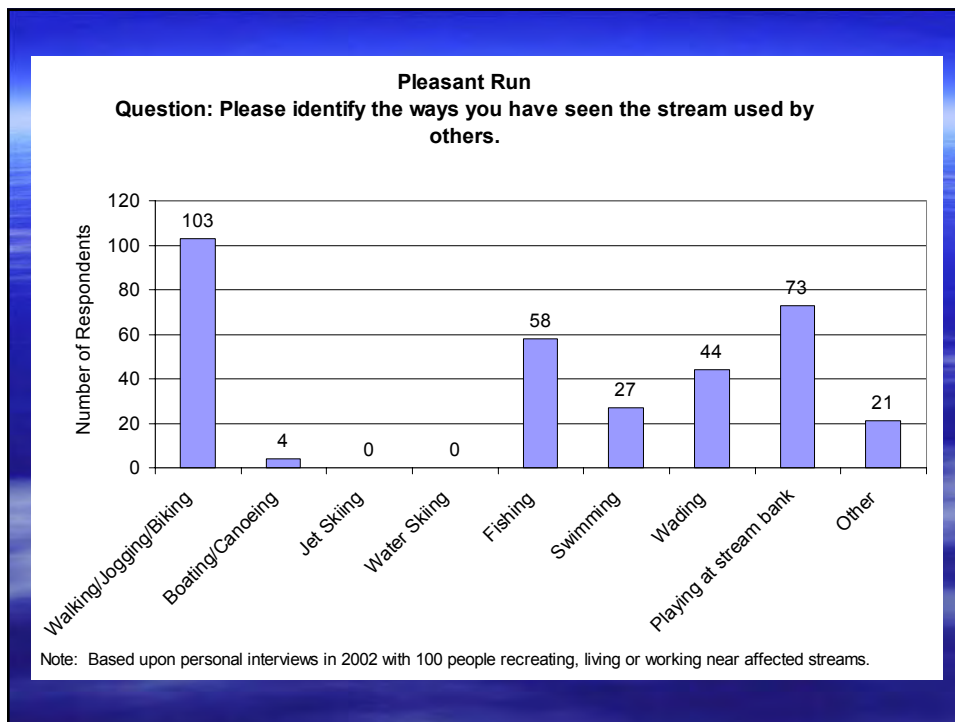
Source: USGS gauge station 03353180 in Bean Creek, 80 feet upstream of Keystone Avenue, November 28, 1975 to September 30, 1993. Data not available after September 30, 1993.

Flow Variations in Bean Creek



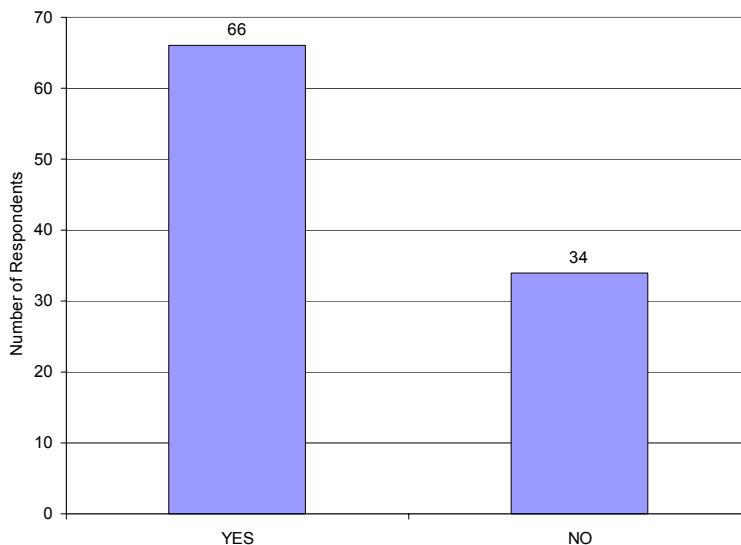






Pleasant Run

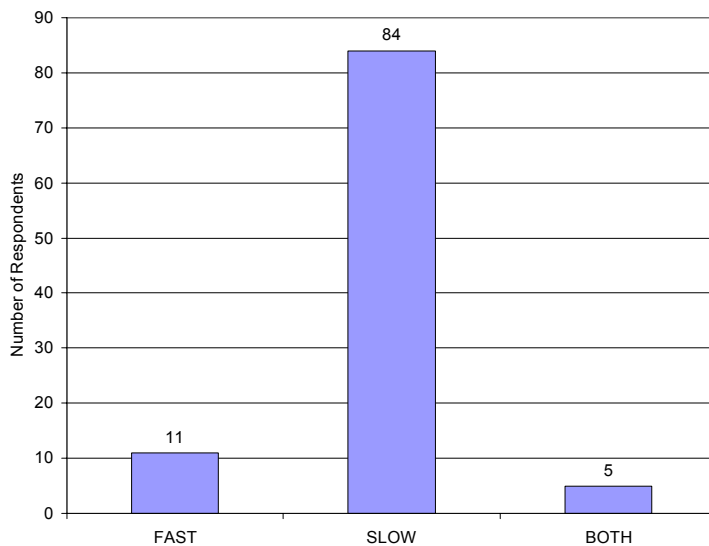
Question: Have you observed children or adults playing in the stream during or within 24 hours after a rainfall?



Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

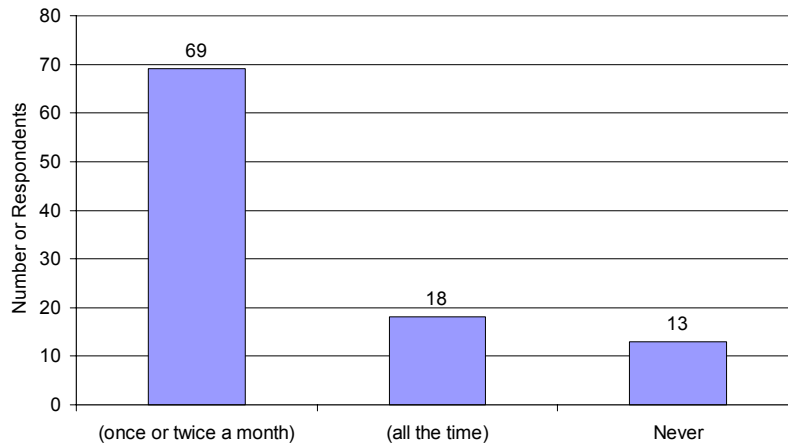
Pleasant Run

Question: Based on your experience, do you see children or adults playing in the stream when the current is fast or slow?



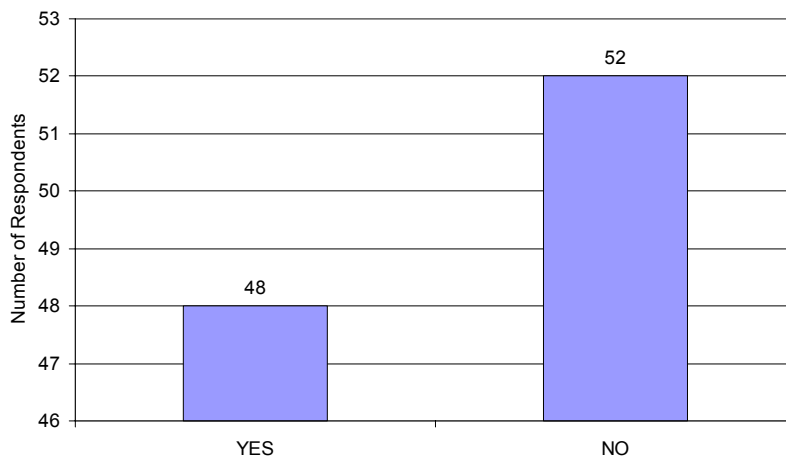
Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Pleasant Run
Question: How often would you say you have observed children or adults playing in the stream after a rainfall?

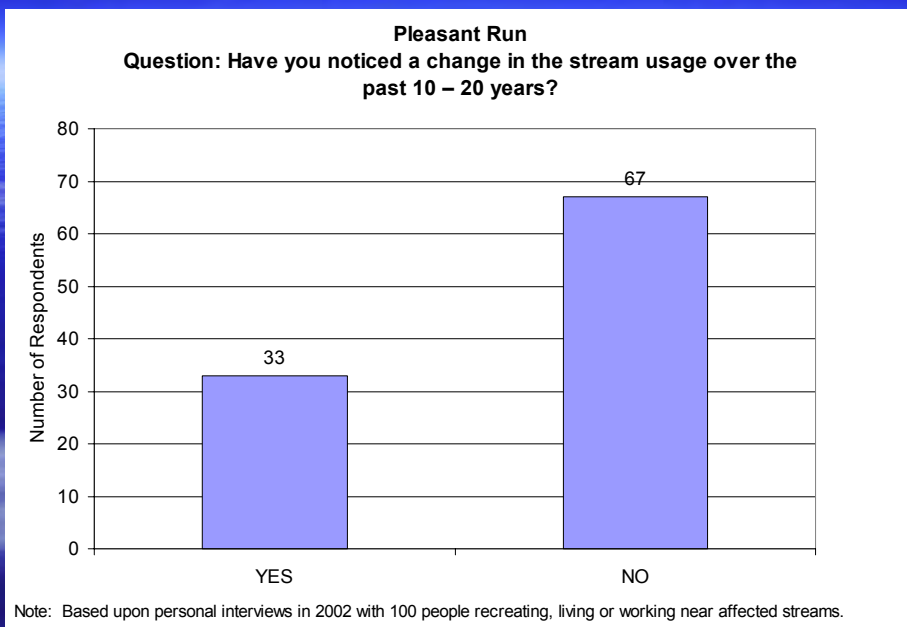


Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

Pleasant Run
Question: Are you aware that signs are posted along the streams warning people to stay away because of pollution from sewage?

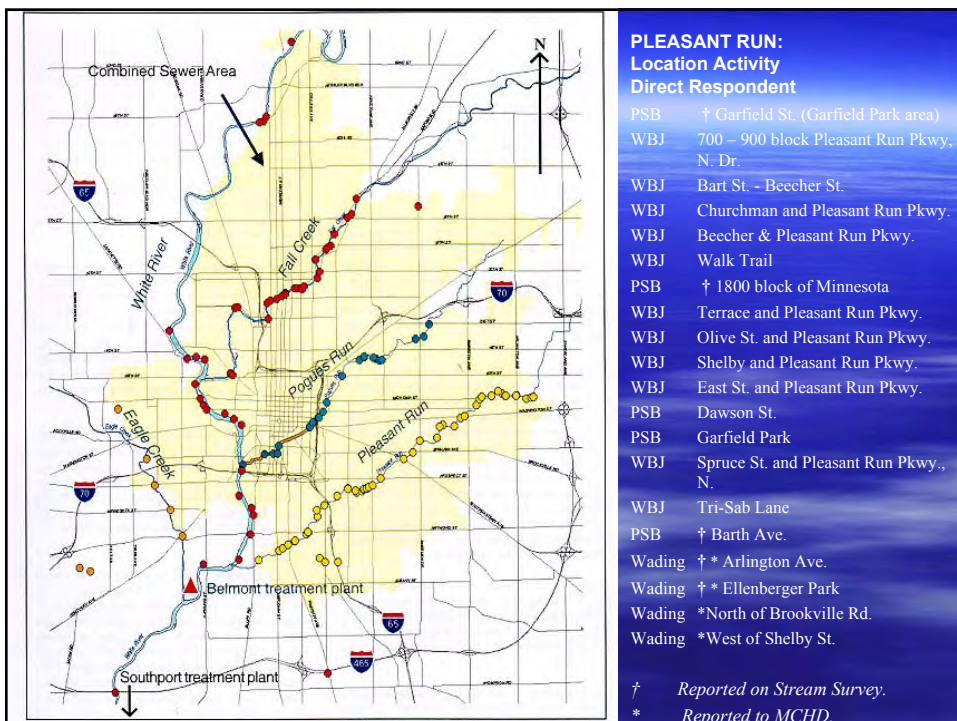
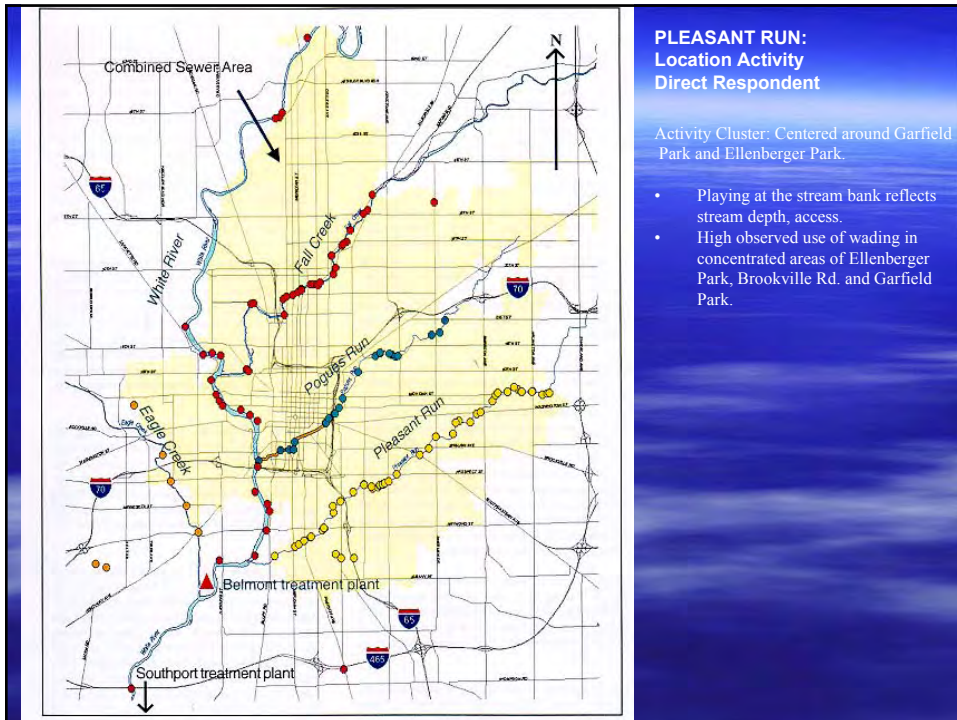


Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.



Location of Use

Activity	Location/Direct Respondent	Stream Survey	MCHD
PSB	Garfield St. (Garfield Park area)	X	
WBJ	700 – 900 block Pleasant Run Pkwy, N. Dr.		
WBJ	Bart St. - Beecher St.		
WBJ	Churchman and Pleasant Run Pkwy.		
WBJ	Beecher & Pleasant Run Pkwy.		
WBJ	Walk Trail		
PSB	1800 block of Minnesota	X	
WBJ	Terrace and Pleasant Run Pkwy.		
WBJ	Olive St. and Pleasant Run Pkwy.		
WBJ	Shelby and Pleasant Run Pkwy.		
WBJ	East St. and Pleasant Run Pkwy.		
PSB	Dawson St.		
PSB	Garfield Park		
WBJ	Spruce St. and Pleasant Run Pkwy., N.		
WBJ	Tri-Sab Lane		
P at SB	Barth Ave.	X	
Wading	Arlington Ave.	X	X
Wading	Ellenberger Park	X	X
Wading	North of Brookville Rd.		X
Wading	West of Shelby St.		X



FINAL Survey Results - Pleasant Run

In a typical year, how often have you or any member of your family come into water contact with Pleasant Run?

	Total Number	%
Less than once a month	13	13%
Once a Month	15	15%
Twice a month	23	23%
Every week	47	47%
Other	2	2%
TOTALS	100	100%

What is your primary usage of this stream?

	Total Number	%
Walking/Jogging/Biking	82	82%
Boating/Canoeing	1	1%
Jet Skiing	0	0%
Water Skiing	0	0%
Fishing	3	3%
Swimming	1	1%
Wading	1	1%
Playing at stream bank	4	4%
Other	8	8%
TOTALS	100	100%

In addition to primary usage – please identify other ways you or those in your family use the stream.

	Total Number	%
Walking/Jogging/Biking	82	54%
Boating/Canoeing	0	0%
Jet Skiing	0	0%
Water Skiing	0	0%
Fishing	17	11%
Swimming	8	5%
Wading	5	3%
Playing at stream bank	26	17%
Other	13	9%
TOTALS	151	100%

Please identify the ways you have seen the stream used by others.

	Total Number	%
Walking/Jogging/Biking	103	31%
Boating/Canoeing	4	1%
Jet Skiing	0	0%
Water Skiing	0	0%
Fishing	58	18%
Swimming	27	8%
Wading	44	13%
Playing at stream bank	73	22%
Other	21	6%
TOTALS	330	100%

Also, who in your family uses the stream most frequently?

	Total Number	%
ADULTS	69	69%
CHILDREN	31	31%
TOTAL	100	100%

Have you observed children or adults playing in the stream during or within 24 hours after a rainfall?

	Total Number	%
YES	66	66%
NO	34	34%
TOTAL	100	100%

Based on your experience, do you see children or adults playing in the stream when the current is fast or slow?

	Total Number	%
FAST	11	11%
SLOW	84	84%
BOTH	5	5%
TOTALS	100	100%

How often would you say you have observed children or adults playing in the stream after a rainfall?

	Total Number	%
(once or twice a month)	69	69%
(all the time)	18	18%
Never	13	13%
TOTALS	100	100%

Are you aware that signs are posted along the streams warning people to stay away because of pollution from sewage?











	Total Number	%
YES	48	48%
NO	52	52%
TOTAL	100	100%

Age Group	Total Number	%
18-29	39	39%
30-39	28	28%
40-49	16	16%
50-59	8	8%
60+	9	9%
TOTAL	100	100%

Have you noticed a change in the stream usage over the past 10 – 20 years?

	Total Number	%
YES	33	33%
NO	67	67%
TOTAL	100	100%

Legend

-  CSO Location
-  Stream Depth, July 2001
-  Limited Access
-  Heavy Vegetation
-  Moderate Vegetation
-  Light Vegetation
-  Steep Slope
-  Moderate Slope
-  Gradual Slope
-  Park

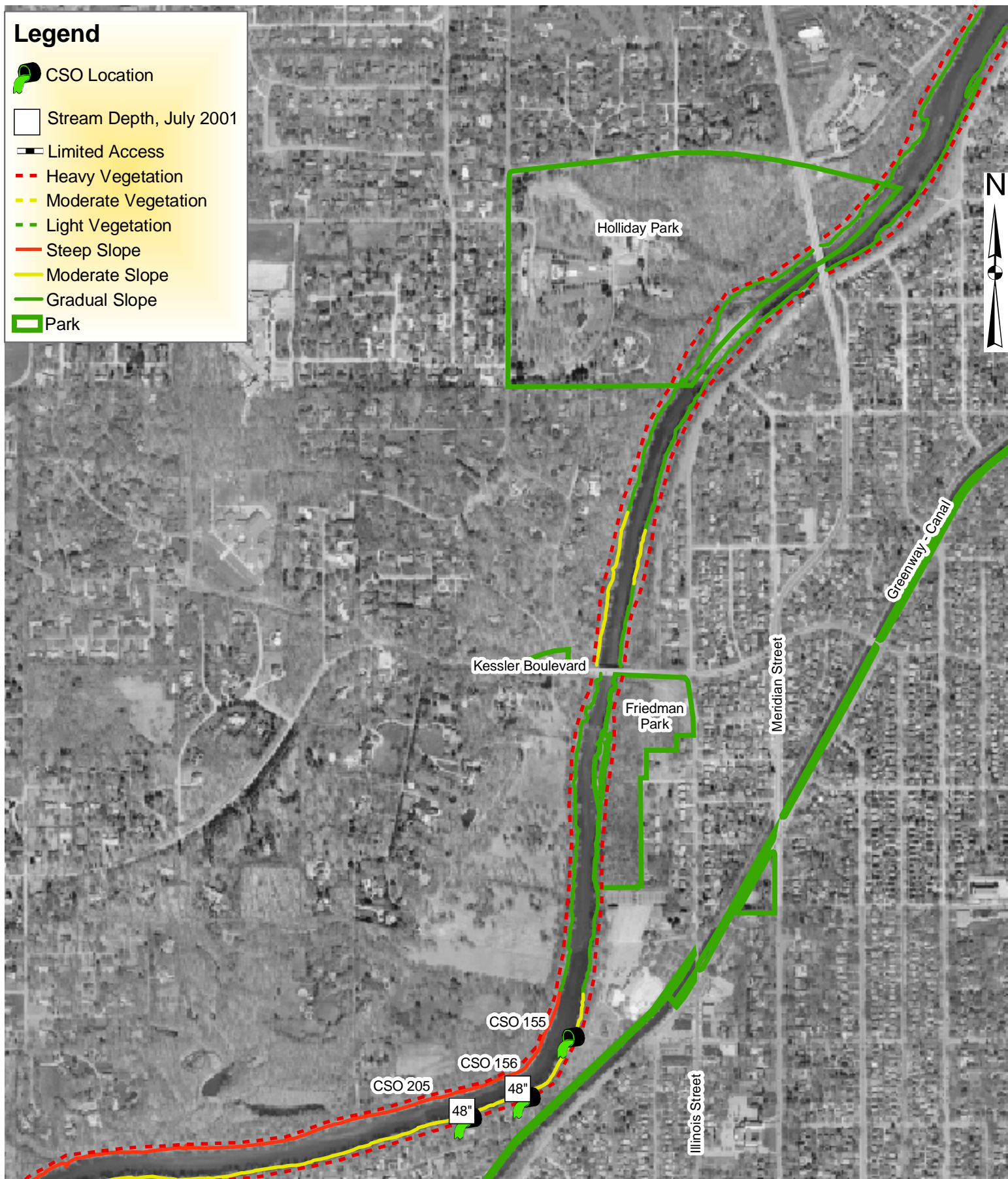












Figure 2-2a
Physical Stream Characteristics
White River
Sheet 1 of 8

Legend

-  CSO Location
-  Stream Depth, July 2001
-  Limited Access
-  Heavy Vegetation
-  Moderate Vegetation
-  Light Vegetation
-  Steep Slope
-  Moderate Slope
-  Gradual Slope
-  Park

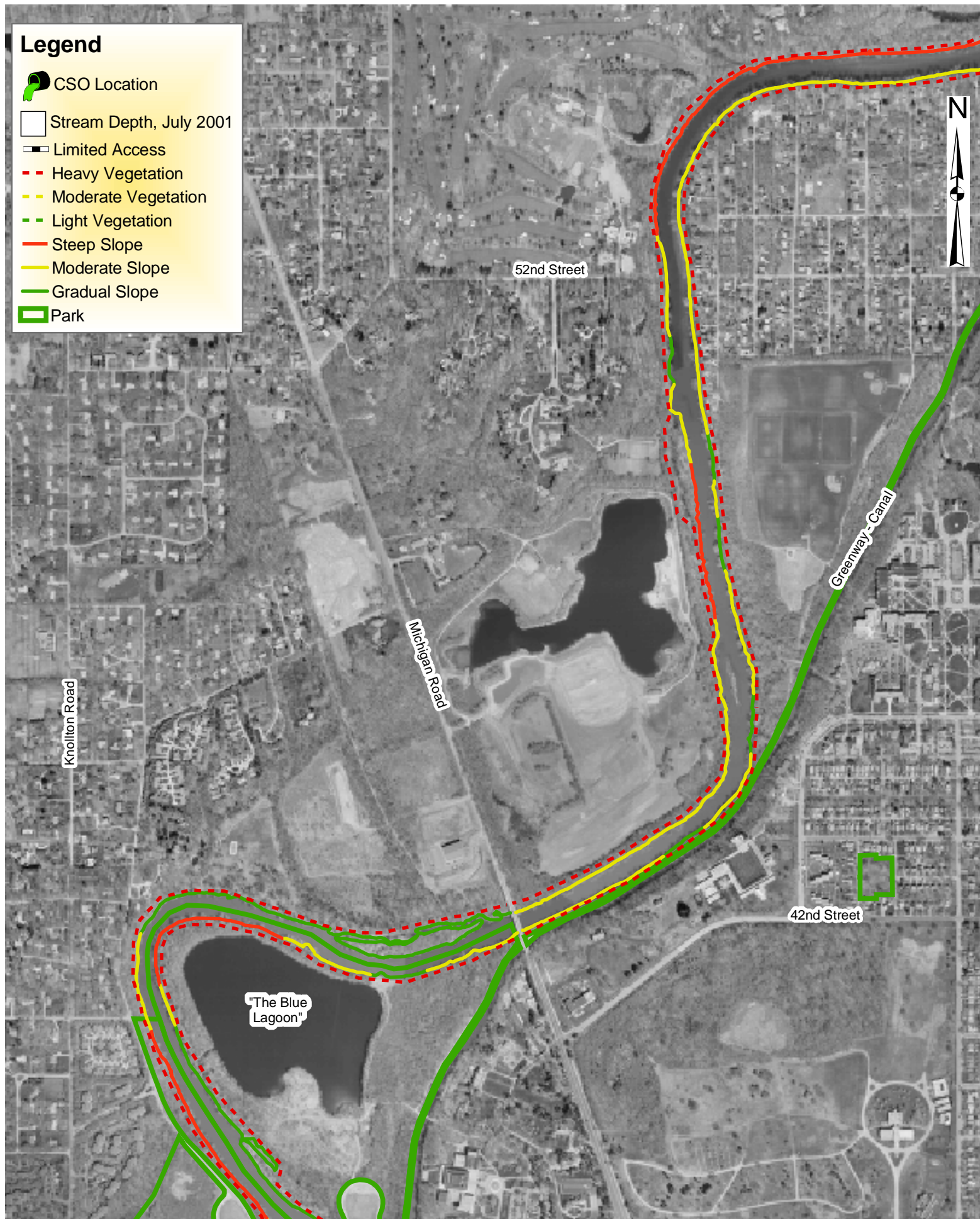





Figure 2-2b
Physical Stream Characteristics
White River
Sheet 2 of 8

Legend

-  CSO Location
-  Stream Depth, July 2001
-  Limited Access
-  Heavy Vegetation
-  Moderate Vegetation
-  Light Vegetation
-  Steep Slope
-  Moderate Slope
-  Gradual Slope
-  Park

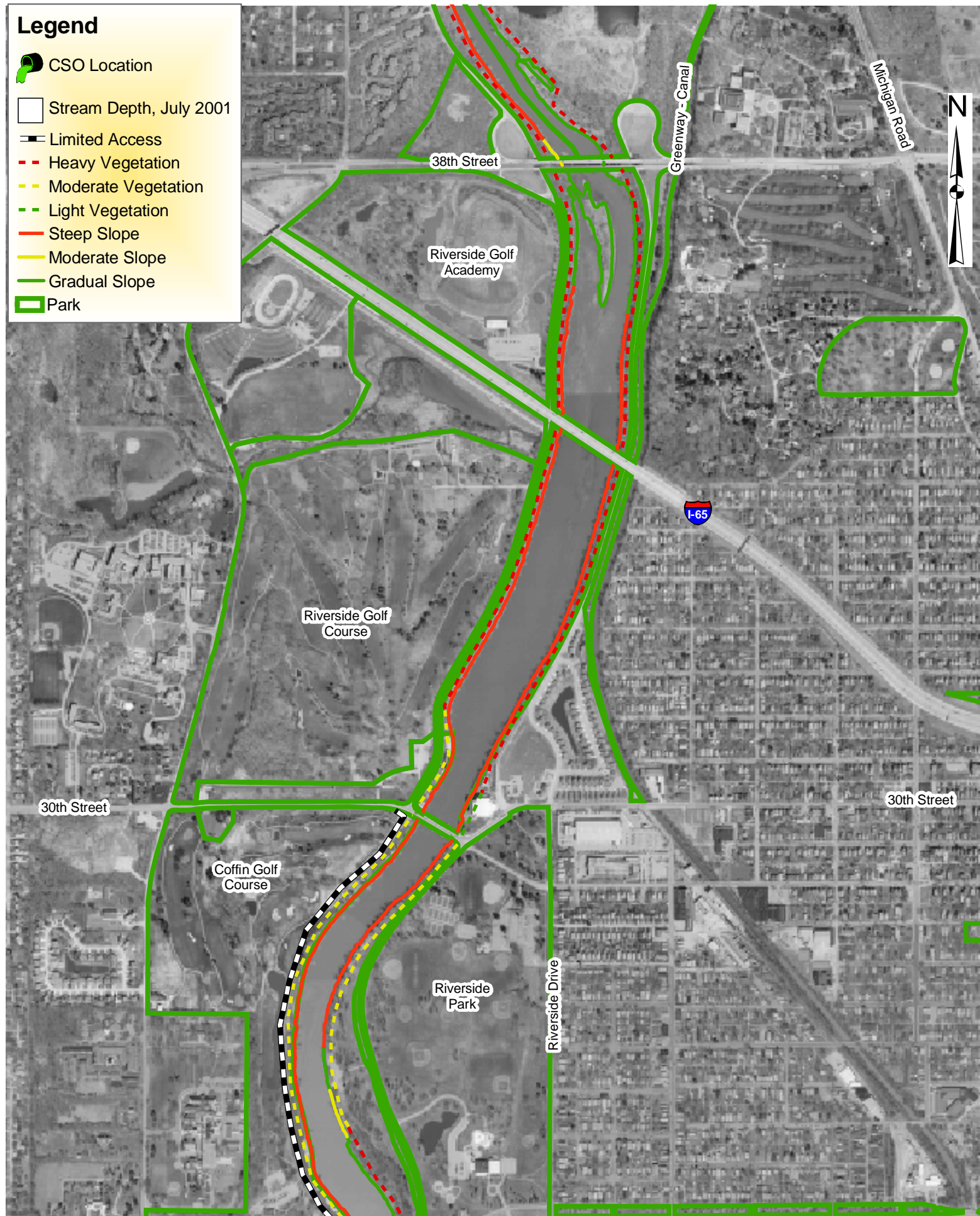


Figure 2-2c
Physical Stream Characteristics
White River
Sheet 3 of 8

Legend








-  CSO Location
-  Stream Depth, July 2001
-  Limited Access
-  Heavy Vegetation
-  Moderate Vegetation
-  Light Vegetation
-  Steep Slope
-  Moderate Slope
-  Gradual Slope
-  Park



Figure 2-2d
Physical Stream Characteristics
White River
Sheet 4 of 8

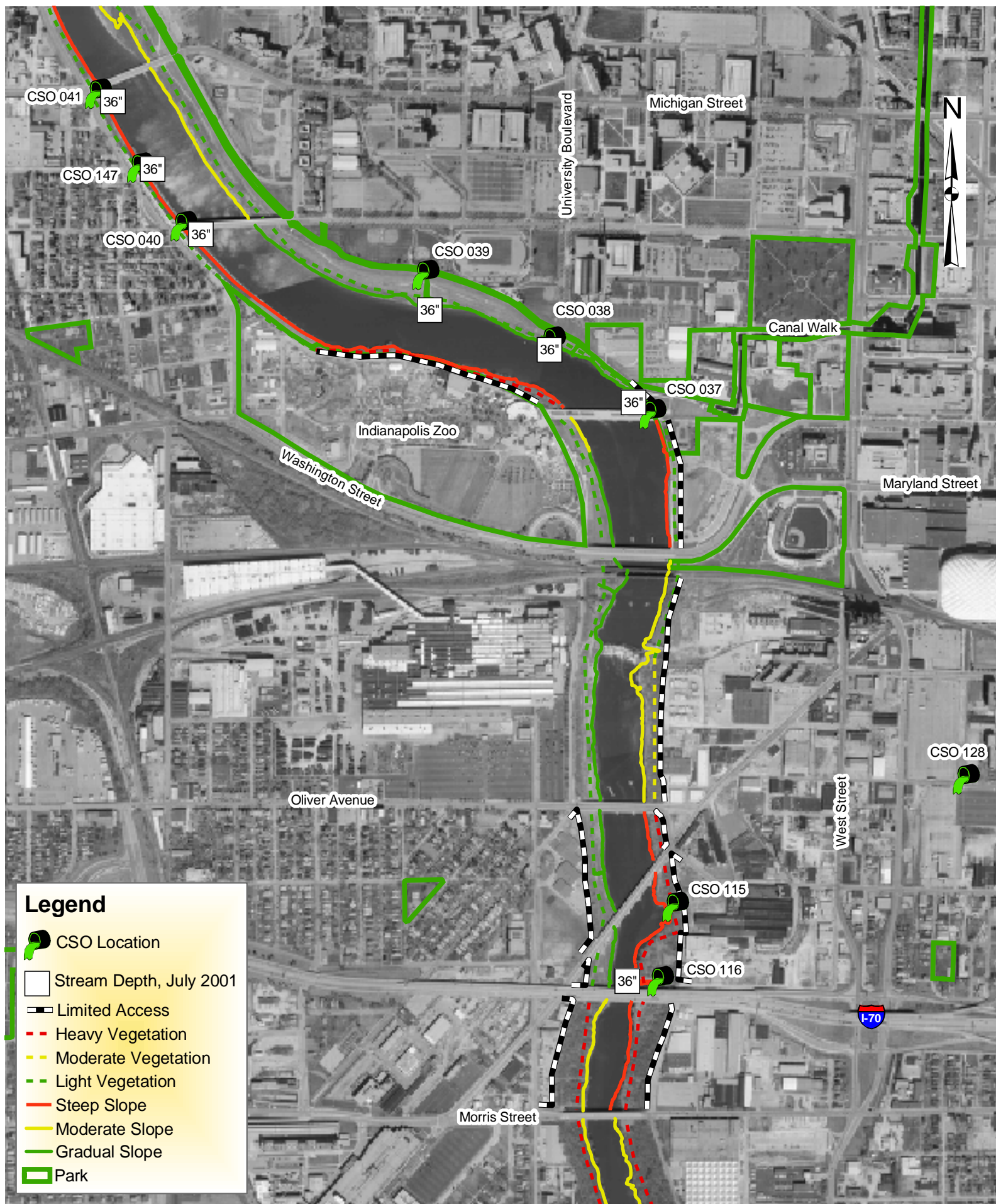












Figure 2-2e
Physical Stream Characteristics
White River
Sheet 5 of 8

Legend

-  CSO Location
-  Stream Depth, July 2001
-  Limited Access
-  Heavy Vegetation
-  Moderate Vegetation
-  Light Vegetation
-  Steep Slope
-  Moderate Slope
-  Gradual Slope
-  Park

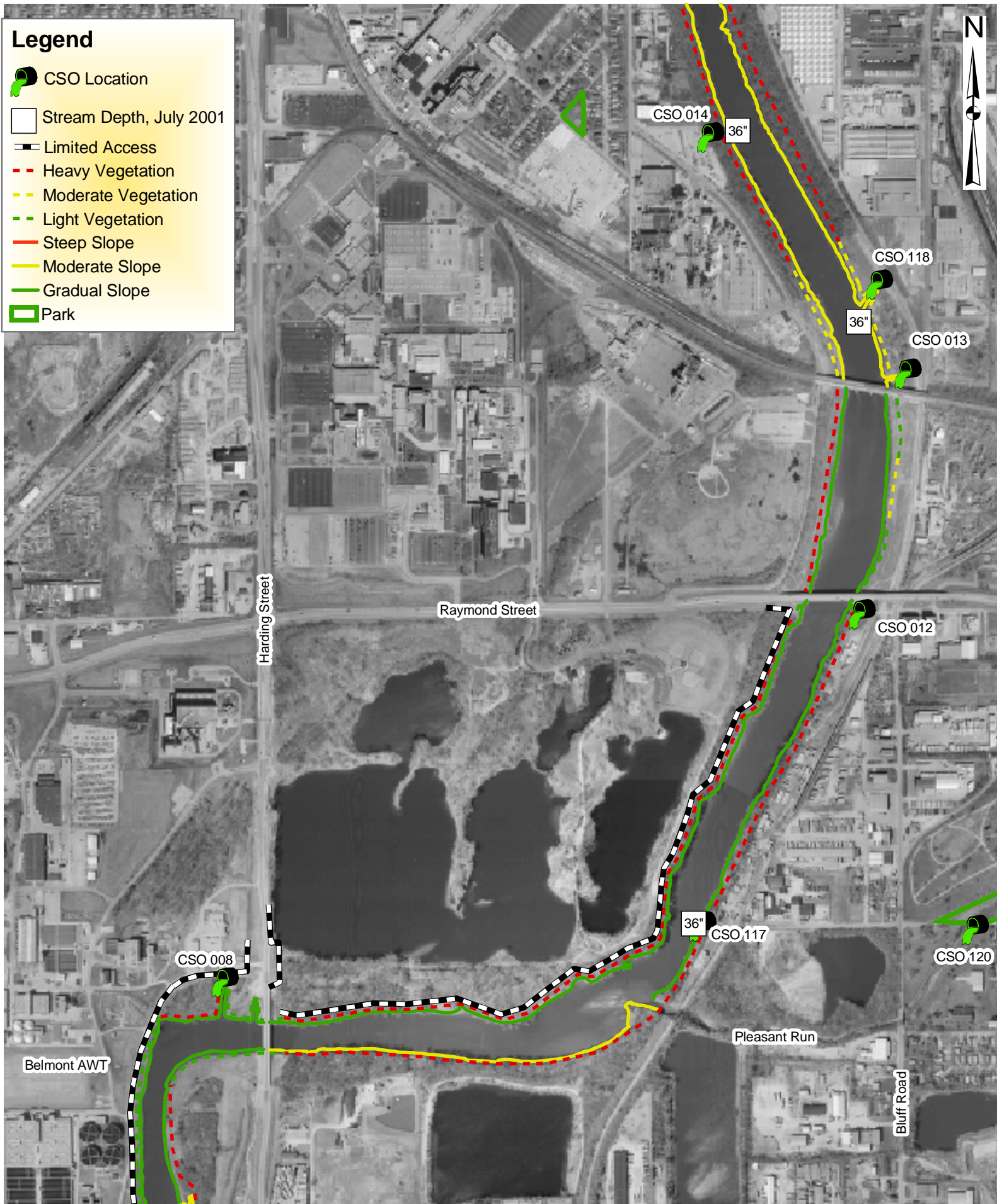


Figure 2-2f
Physical Stream Characteristics
White River
Sheet 6 of 8

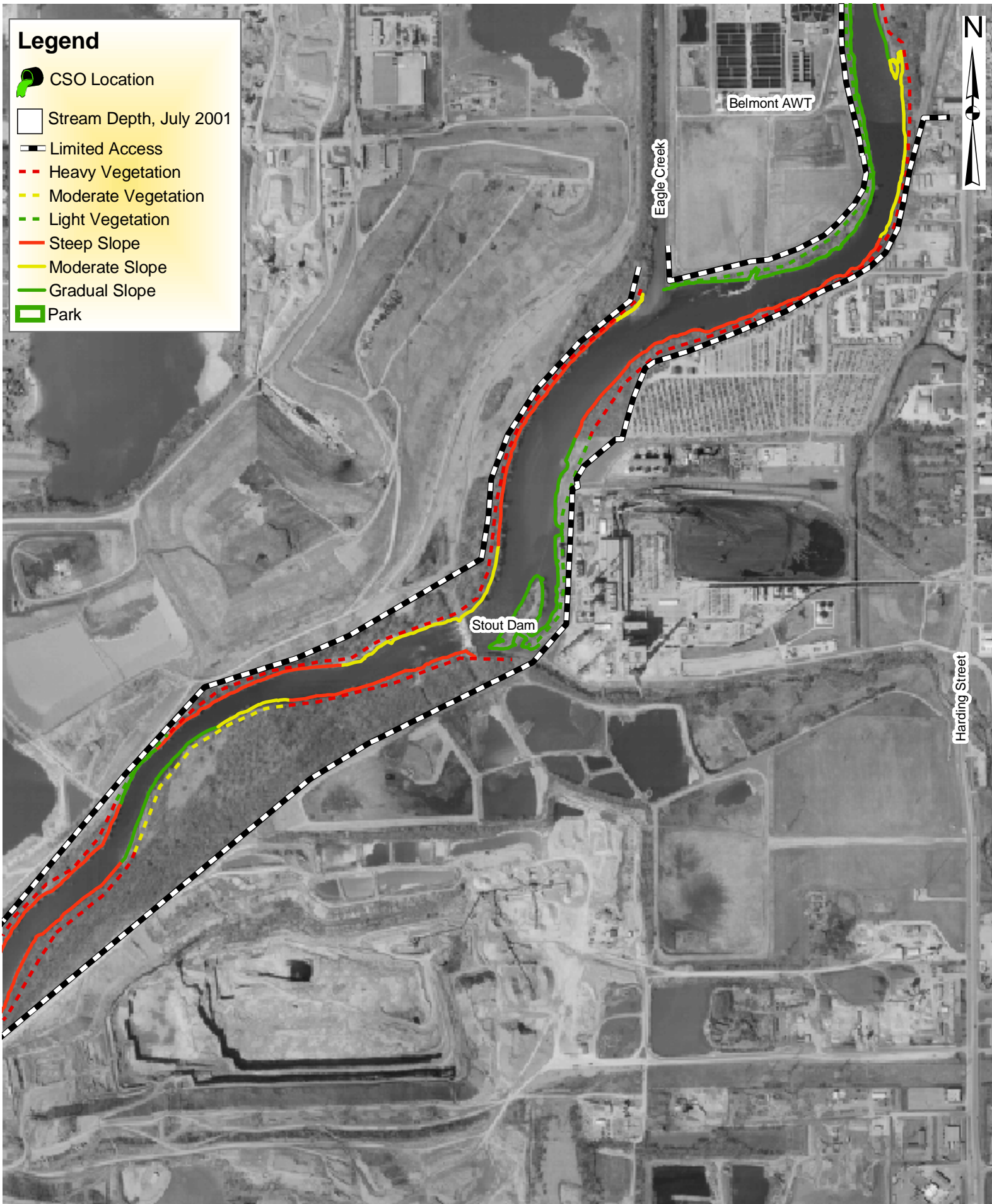












Figure 2-2g
Physical Stream Characteristics
White River
Sheet 7 of 8

Legend

-  CSO Location
-  Stream Depth, July 2001
-  Limited Access
-  Heavy Vegetation
-  Moderate Vegetation
-  Light Vegetation
-  Steep Slope
-  Moderate Slope
-  Gradual Slope
-  Park

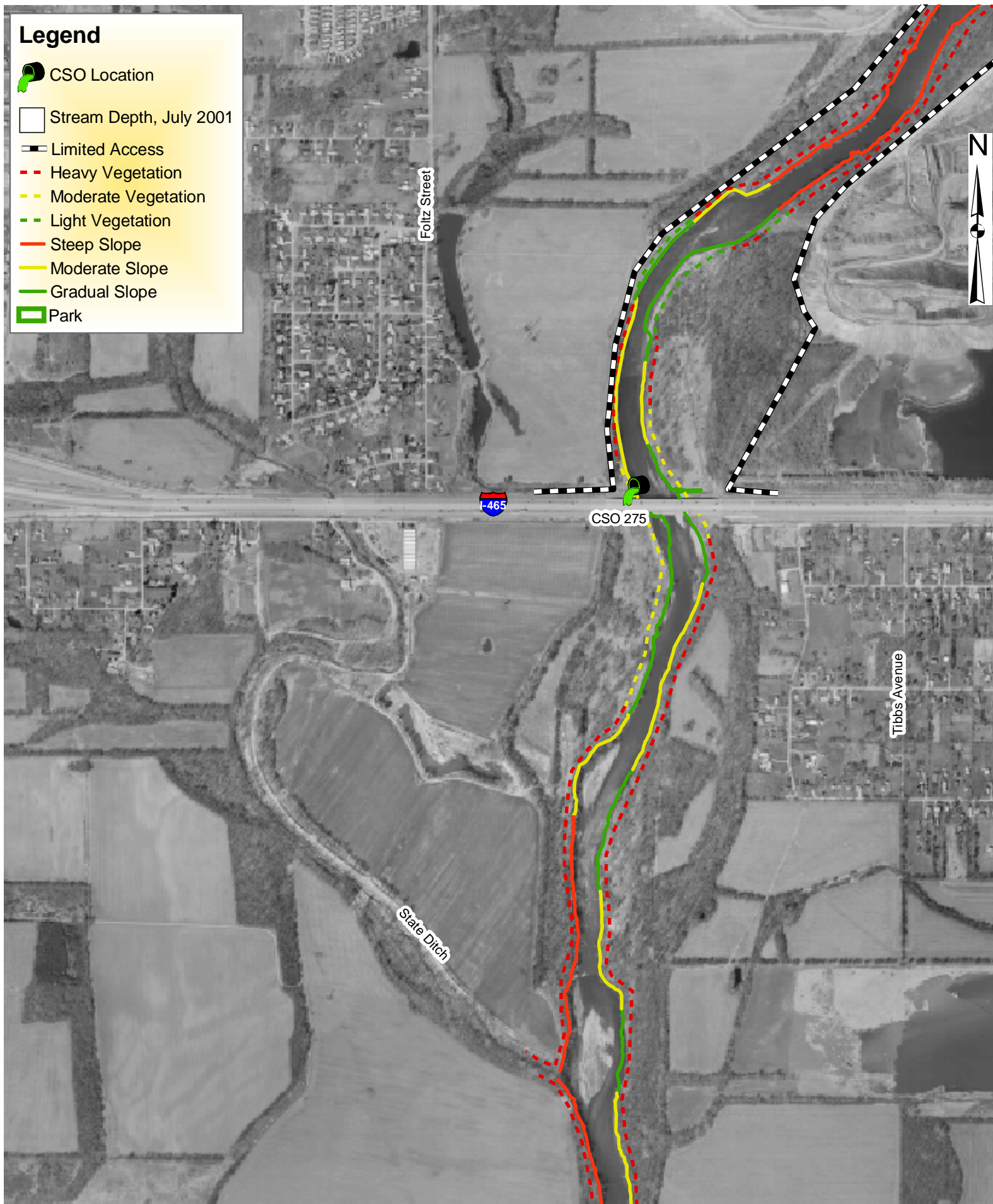


Figure 2-2h
Physical Stream Characteristics
White River
Sheet 8 of 8

INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Criteria	4	4	156	155 ³	Description of Marion County Streams		4	4	4	4	046 ³
	North of Holiday Park	North of Kessler St. Bridge	Kenwood Ave. and Westfield Blvd.	Pennsylvania St. and 54th St.	Boulevard Pl. and White River Westfield Blvd.	Near Riviera Club	South of 52nd St.	North of Butler University	North of Christian Theological Seminary	North of Michigan Rd.	Lafayette Rd. and 19th St.
Overflows per year (average) ¹			Eliminated (August 2002)	30	42						6
Annual Overflow Volume Range (MG/year) ¹				48-65	16-22						<1
Other Discharges											
Location											
Type											
Factors that support/encourage recreational use											
School	no	no	no	no	no	no	no	no	no	no	no
Park	yes	no	no	Riviera Club	no	Riviera Club	no	no	no	no	yes
Trail	yes, to river bank	yes, along east bank	along side CSO	no	no	no	trails along west bank	no	yes, along east bank	no	no
Other					backyard			several backyards run up to river bank			
Factors that prohibit/discourage recreational use											
Warning Signs/City Ordinance ²	N/A	N/A	could not see from river	yes	could not see from river	N/A	N/A	N/A	N/A	N/A	yes
Fence	no	no	no	no	no	no	no	no	no	no	yes
Steep Banks	no	yes	yes, on west bank	yes	yes, on west bank	no	no	no	no	no	yes
Other	some woods	heavily wooded	wooded on both banks	wooded on both banks	rocky bank	heavily wooded on west bank	rocky east bank	heavily wooded on west bank	heavily wooded on west bank	rocky and heavily wooded banks	heavily wooded banks
Access											
West Bank	Moderately Difficult	Extremely Difficult		Moderately Difficult			Extremely Difficult	Extremely Difficult	Extremely Difficult		Extremely Difficult
East Bank		Moderately Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult		Moderately Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult
Stream's Physical Attributes											
Depth	~ 1 - 1.5 ft.	~ 1 - 1.5 ft.	~ 3 -4 ft.	> 10 ft.	~ 3 -4 ft.	~ 7 ft.	~ 1 ft.	~ 1.5 ft.	~ 2 -3 ft.	~ 2 -3 ft.	
Velocity	slow	slow	slow	moderate - quick	slow	slow	slow	slow	slow	slow	quick
Width	~ 50 - 60 ft.	~ 50 - 60 ft.	~ 50 ft.	~ 80 ft.	~ 50 ft.	~ 50 - 60 ft.	~ 50 ft.	~ 50 ft.	~ 50 ft.	~ 50 ft.	~ 90 ft.
Substrate	rocky	rocky	some rocks, sandy	sand, cobble	some rocks, sandy	could not distinguish	rocky	sandy	could not distinguish	rocky	sandy
Safety	no	no	no	no	no	no	no	OK	OK	no	no
Land Use											
Public	yes	no	no	no	no	yes	no	no	yes	yes	yes
Residential/Wooded	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
Industrial/Commercial	no	no	no	no	no	no	no	no	no	no	no
Stream Use											
Habitat for Aquatic Species											
Natural riparian	yes	yes	yes		yes	yes	yes	yes	yes	yes	
Partially Developed (Subdivision)											
Fully Urbanized Development				yes							yes
Other Comments	area evaluated from kayak	area evaluated from kayak				area evaluated from kayak	area evaluated from kayak	area evaluated from kayak	area evaluated from kayak	area evaluated from kayak	accessible only by water

Notes:

1. Overflows per year and volume range were revised June 2004.

2. New bilingual warning signs are being placed at all CSO locations.

3. The data for this CSO was collected in June 2004.

4. Pictures not taken by CSO, additional river pictures.

INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Criteria	045 ³	044	043	042 ³	Description of Marion County Streams		040	039	038	037	116
	WRPWD and Belmont Ave.	Waterway Blvd. And Riverside Dr.	Harding St. and Waterway Blvd.	Saint Clair St. and Lynn Ave.	WRPWD and Michigan St.	WRPWD and Vermont St.	New York St. and Koehne St.	New York St. and Beauty Ave.	New York St. and Agnes St.	Washington St. and Geisendorff St.	Meikel St. and Ray St.
Overflows per year (average) ¹	24	<1	46	40	26	13	13	39	31	16	40
Annual Overflow Volume Range (MG/year) ¹	19-26	<1	108-146	57-77	18-24	<1	2-3	111-151	7-9	13-17	39-53
Other Discharges											
Location								downstream	upstream		
Type								storm	storm		
Factors that support/encourage recreational use											
School	no	no	no	yes	no	no	no	yes, IUPUI	yes, IUPUI	yes, IUPUI	no
Park	no	no	no	yes	no	no	no	no	no	yes, zoo and White River Gardens	no
Trail	no	yes	yes	no	yes	yes	yes	yes	yes	yes	trails leading down to river
Other											
Factors that prohibit/discourage recreational use											
Warning Signs/City Ordinance ²	yes	yes	yes	could not locate	yes	could not locate	could not locate	yes	yes	yes	could not locate
Fence	no	no	no	no	no	no	no	no	no	no	no
Steep Banks	no	no	yes	no	concrete west bank	concrete west bank	concrete west bank	no	concrete wall on west side	no	yes
Other		concrete bank	dense vegetation	currently under construction				no		vegetation on west side	no
Access											
West Bank	Easy	Moderately Difficult	Moderately Difficult	Easy	Extremely Difficult	Moderately Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult	Extremely Difficult	Easy
East Bank	Easy	Moderately Difficult	Extremely Difficult	Easy	Easy	Easy	Easy	Easy	Easy	Easy	Extremely Difficult
Stream's Physical Attributes											
Depth	~ 2 - 3 ft.	~ 2 - 3 ft.	~ 2 - 3 ft.		~ 2 - 3 ft.	~ 2 - 3 ft.	~ 2 - 3 ft.	~ 2 - 3 ft.	~ 2 - 3 ft.	~ 2 - 3 ft.	~ 2 - 3 ft.
Velocity	none	slow	slow	quick	slow	slow	slow	slow	slow	slow	slow
Width	~ 20 ft.	~ 80 ft.	~ 80 ft.	~ 80'	~ 80 ft.	~ 80 ft.	~ 80 ft.	~ 80 ft.	~ 80 ft.	~ 80 ft.	~ 50-60 ft.
Substrate	mud	muddy by bank	muddy by bank	sandy	could not distinguish	could not distinguish	could not distinguish	could not distinguish	could not distinguish	could not distinguish	little rocks, sandy
Safety	OK	OK	OK	no	OK	OK	OK	OK	OK	OK	OK
Land Use											
Public	yes	yes	yes	no	no	no	no	no	no	no	yes
Residential/Wooded	no	no	no	no	no	no	no	no	no	no	no
Industrial/Commercial	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Stream Use											
Habitat for Aquatic Species											
Natural riparian		yes	yes		yes, east side	yes, east side	yes, east side	yes, east side	yes, east side	yes, east side	yes
Partially Developed (Subdivision)											
Fully Urbanized Development	yes	yes, on west side		yes	yes, west side	yes, west side	yes, west side	yes, west side	yes, west side		
Other Comments	spills into side channel ~30 ft.			short side shoot							

- Notes:
1. Overflows per year and volume range were revised June 2004.
 2. New bilingual warning signs are being placed at all CSO locations.
 3. The data for this CSO was collected in June 2004.
 4. Pictures not taken by CSO, additional river pictures.

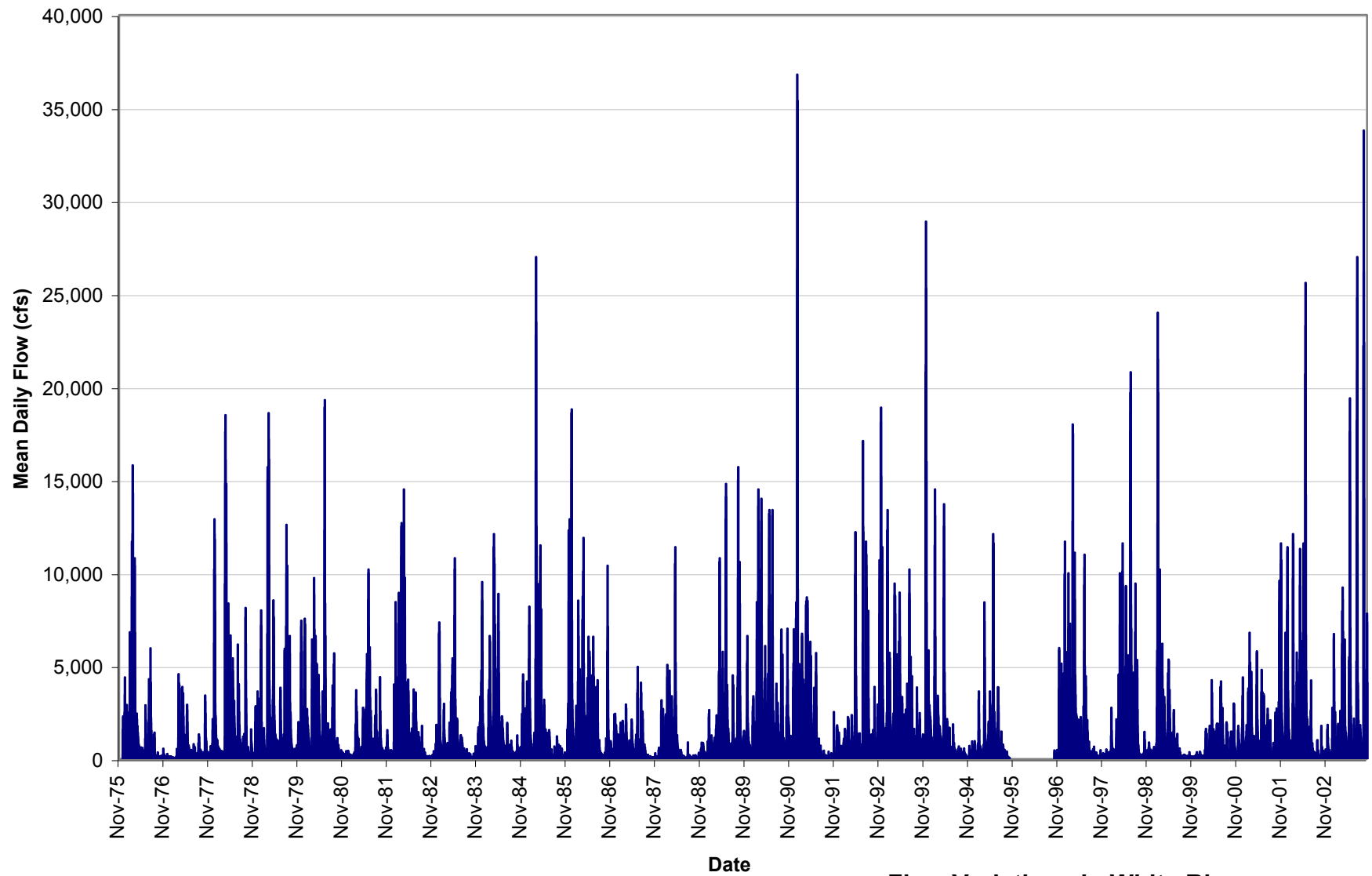
INDIANAPOLIS CSO LONG-TERM CONTROL PLAN

Use Attainability Analysis

Criteria	014	118	013	012	Description of Marion County Streams ³		275 ³
	Kentucky Ave. and York St.	WRPED and West St.	Meridian St. and Adler St.	Raymond St. and West St.	Southern Ave. and White River	Belmont AWT	4945 S. Foltz
Overflows per year (average) ¹	Eliminated (May 2002)	51	21	34	67-70 ⁵	67-70 ⁵	3
Annual Overflow Volume Range (MG/year) ¹		461-623	21-29	8-11	978-1,323 ⁵	978-1,323 ⁵	2-3
Other Discharges							
Location	NW corner of bridge			Downstream, SW side			
Type	storm			submerged			
Factors that support/encourage recreational use							
School	no	no	no	no	no	no	no
Park	no	no	no	no	no	no	no
Trail	no	no	no	yes	road by lift stations	no	yes, east side
Other					stairs down to CSO		
Factors that prohibit/discourage recreational use							
Warning Signs/City Ordinance ²	could not locate	yes	yes	could not locate	yes	yes	could not locate
Fence	no	no	no	no	no	yes	no
Steep Banks	no	gradual, concrete	gradual, concrete	no	no	no	no
Other	dense vegetation	some vegetation	some vegetation	dense vegetation on south side	dense vegetation	dense vegetation	dense vegetation on west side
Access							
West Bank	Moderately Difficult	Moderately Difficult	Moderately Difficult	Extremely Difficult	Extremely Difficult	Moderately Difficult	Extremely Difficult
East Bank	Extremely Difficult	Extremely Difficult	Extremely Difficult	Easy	Extremely Difficult	Moderately Difficult	Easy
Stream's Physical Attributes							
Depth	2 - 3 ft.	2 - 3 ft.	2 - 3 ft.	2 - 3 ft.	~ 2 - 3 ft.	NA	variable
Velocity	slow	slow	slow	slow	slow	NA	moderate
Width	60 - 70 ft.	60 - 70 ft.	60 - 70 ft.	60 - 70 ft.	~ 50-60 ft.	NA	~ 65 ft.
Substrate	sandy	sandy	sandy	sandy	big rocks by bank	NA	cobble
Safety	OK	OK	OK	OK	no	NA	yes
Land Use							
Public	yes	no	no	yes	no	yes	no
Residential/Wooded	no	no	no	no	no	no	yes, west side
Industrial/Commercial	yes	yes	yes	yes	yes	no	yes, east side
Stream Use							
Habitat for Aquatic Species							
Natural riparian	yes	yes	yes	yes	yes		yes
Partially Developed (Subdivision)		yes, concrete banks	yes, concrete banks				
Fully Urbanized Development						yes	
Other Comments					behind National By-Products	discharges into side channel	

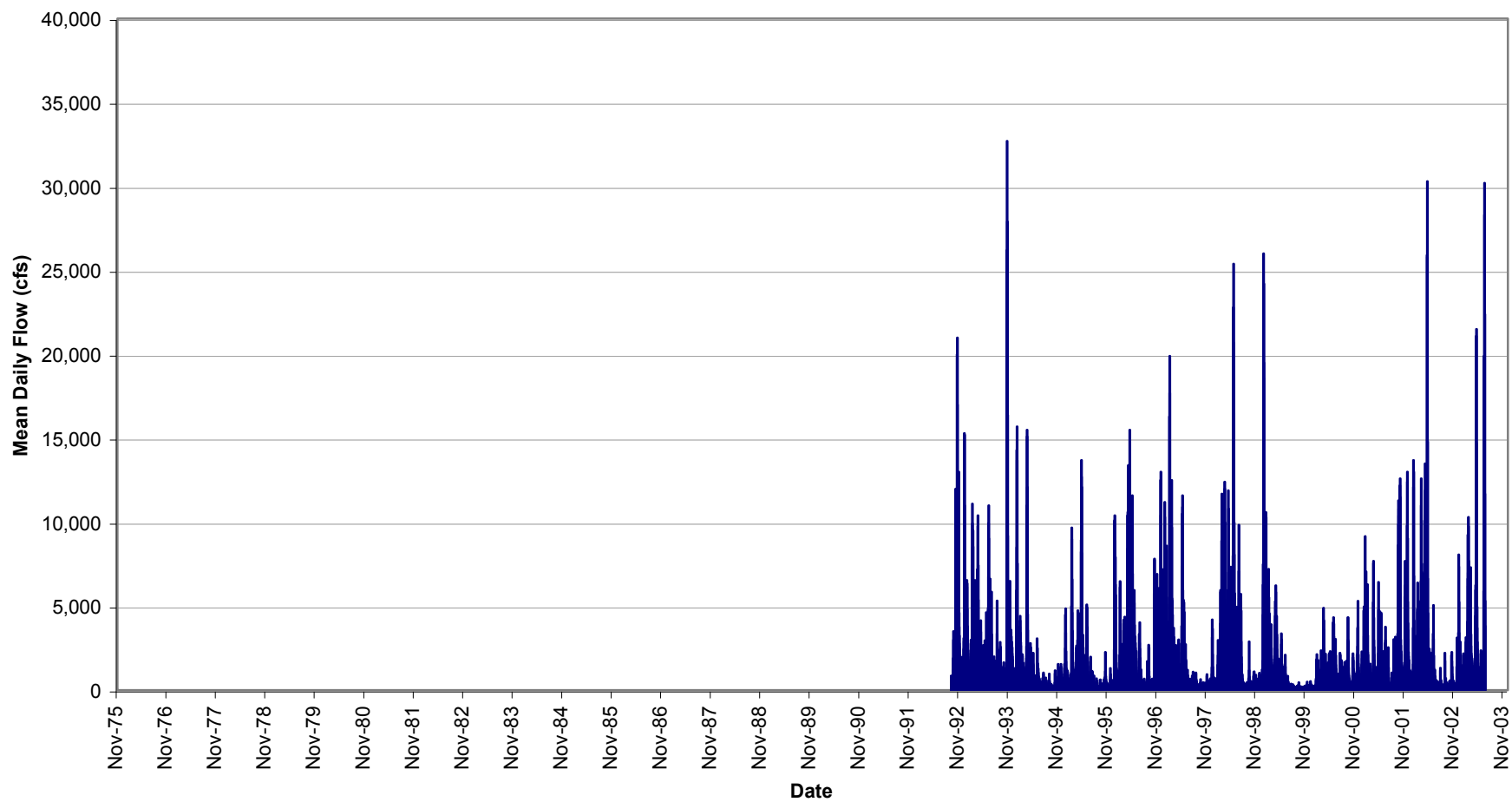
Notes:

1. Overflows per year and volume range were revised June 2004.
2. New bilingual warning signs are being placed at all CSO locations.
3. The data for this CSO was collected in June 2004.
4. Pictures not taken by CSO, additional river pictures.
5. CSO 117 and 008 statistics represent the cumulative statistics for CSOs 008 and 117. The individual overflow volume at CSOs 008 and 117 is dependant on the operation of the Southwest Diversion Structure operation. The cumulative overflow volume at b



Source: USGS gauge station 03353000 in White River (at Morris Street) at Indianapolis, November 28, 1975 to September 30, 2003.

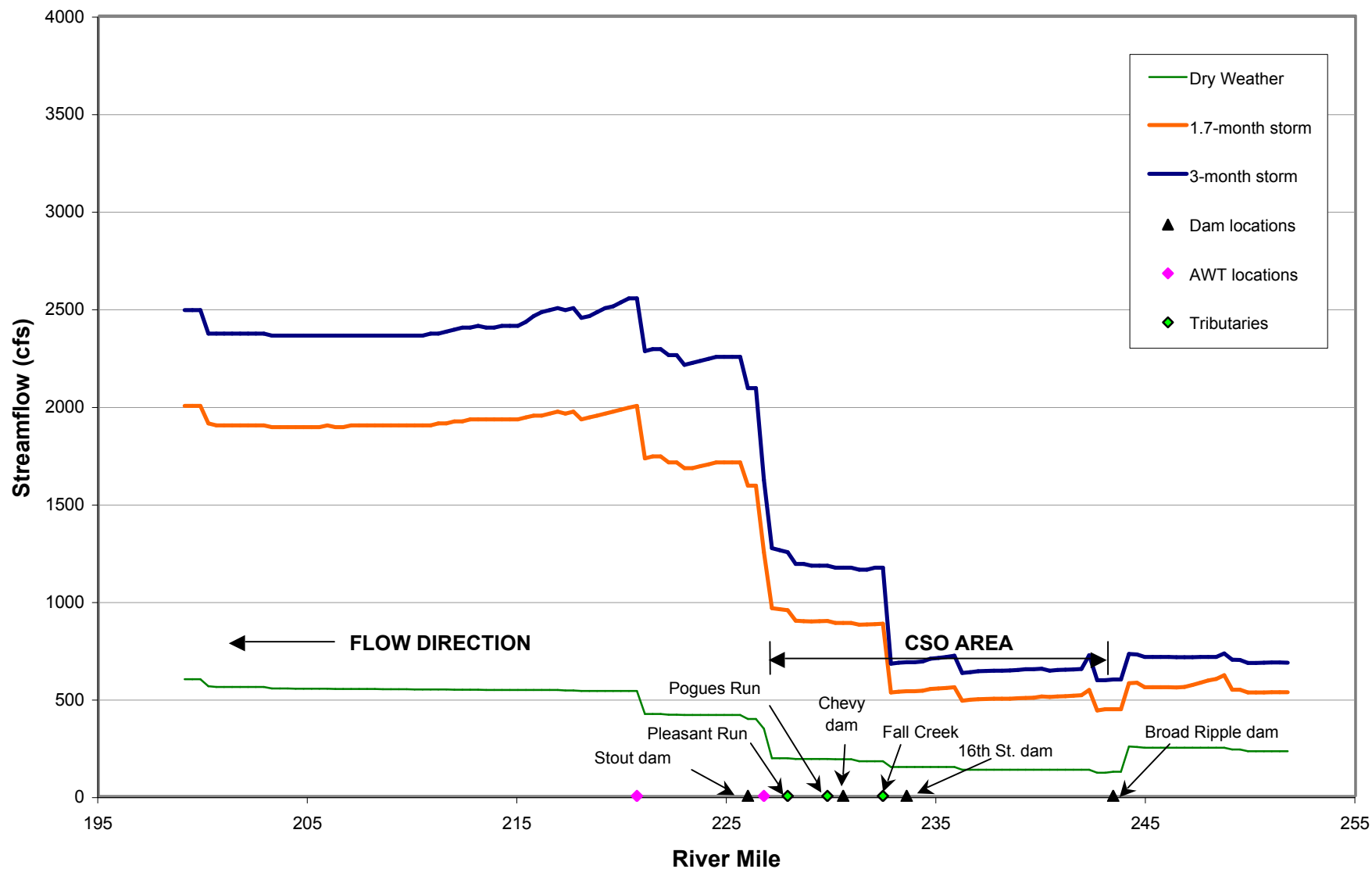
Flow Variations in White River at Morris Street

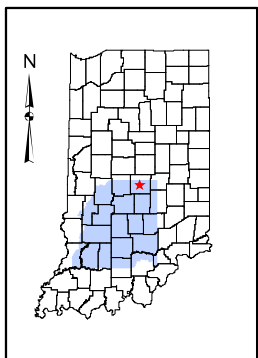
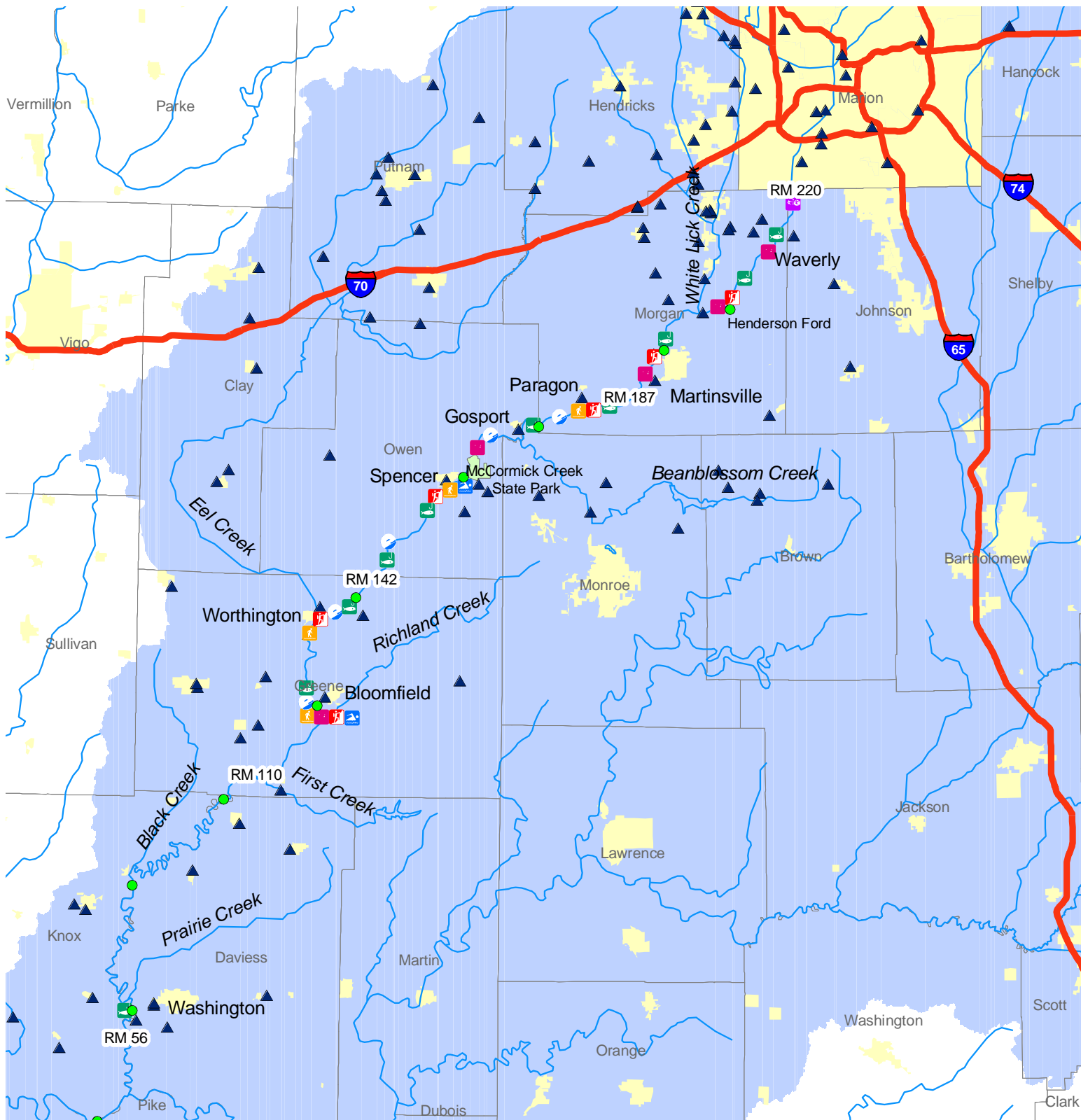


Source: USGS gauge station 03353611 in White River at Stout Gen. Stn. at Indianapolis, October 1, 1992 to September 30, 2003. Data not available before October 1, 1992.

Flow Variations in White River at Stout Generating Station

Modeled Maximum Streamflow in the White River Upstream of Centerton





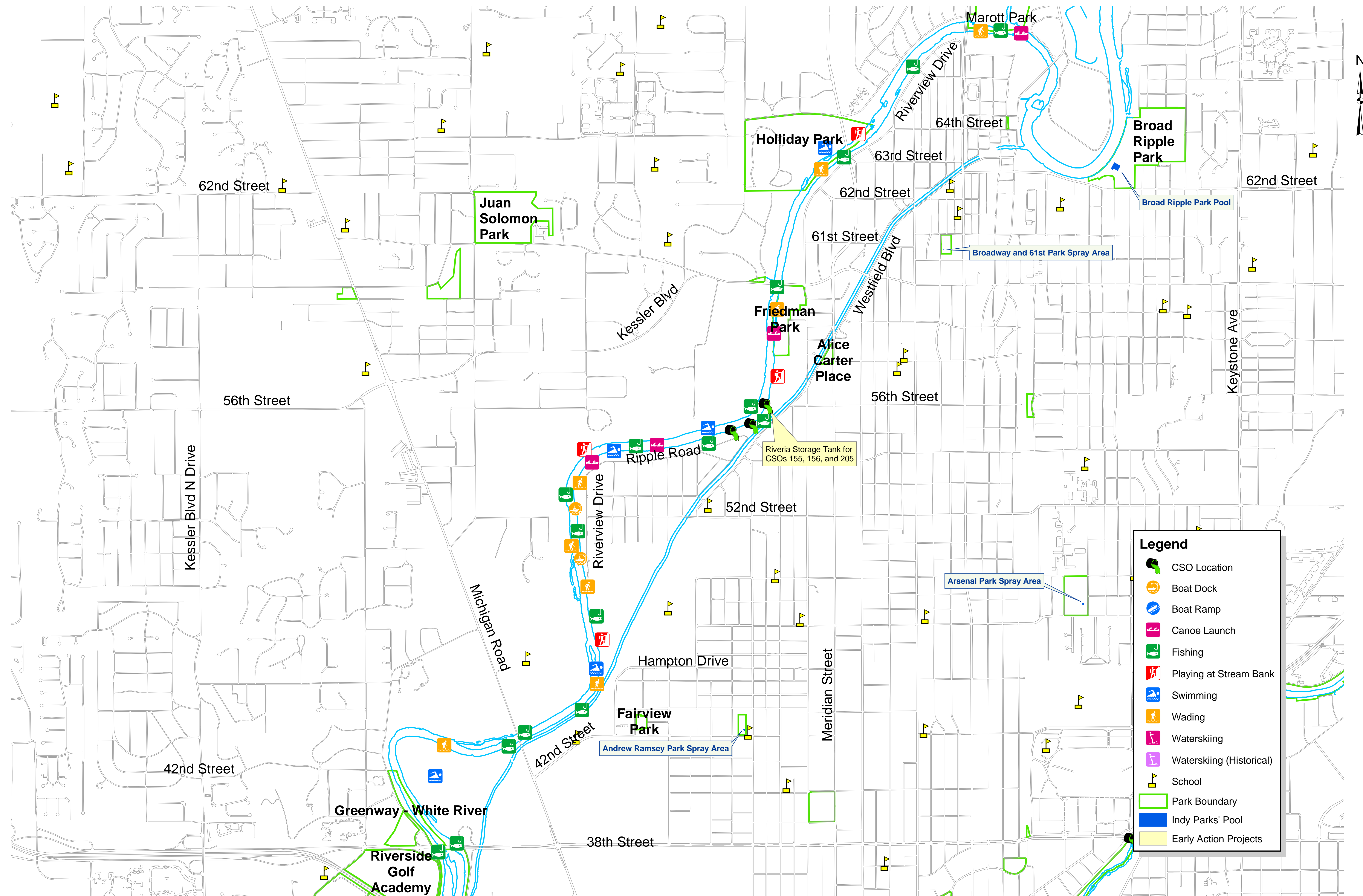
Legend

- | | | | |
|-------------------|------------------------|---------------------|-----------------------|
| Duck Hunting | Playing at Stream Bank | Public Access Point | Populated Areas |
| Fishing | Wading | Interstate | County Border |
| Boating | Swimming | Major Streams | White River Watershed |
| Canoeing-Kayaking | NPDES Permit Facility | | RM = River Mile |

White River Downstream of Marion County Reported and Observed Uses

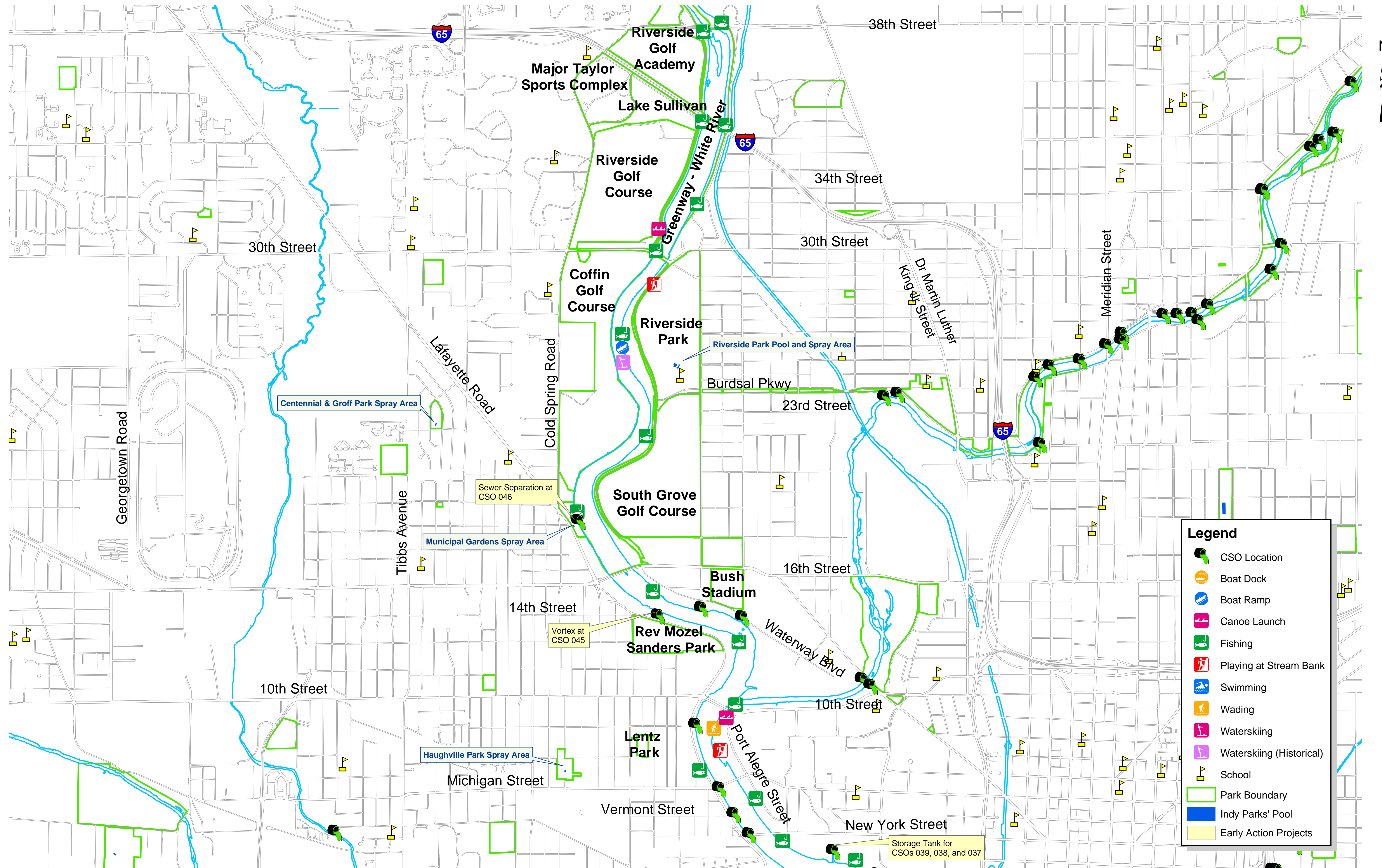
(IGS, 2004, <http://igs.indiana.edu/arcims/statewide/download.html>)

(Purdue University CAAGIS, 2004, <http://danpatch.ecn.purdue.edu/~caagis/ftp/gisdata/data.html>)



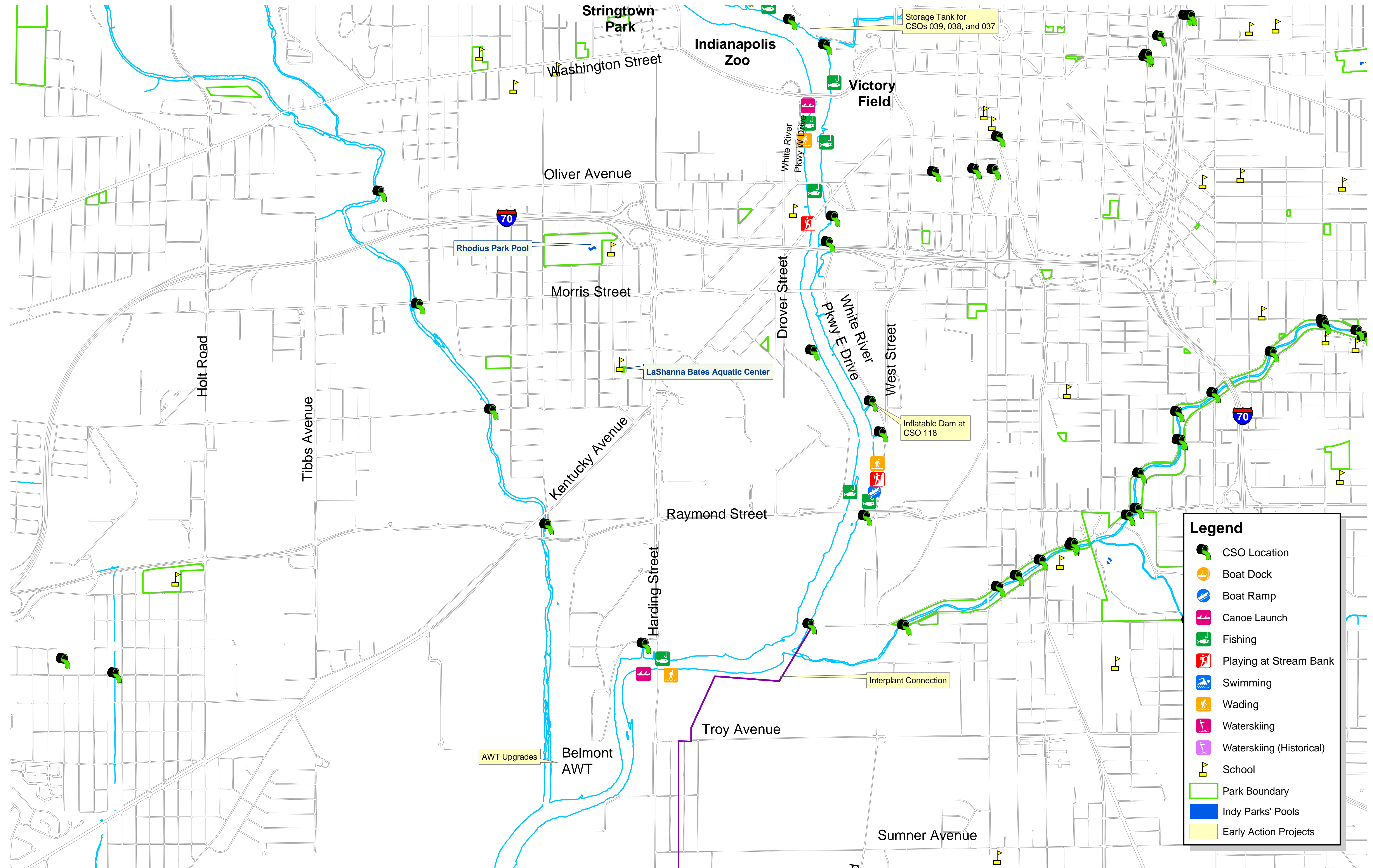
Legend

- CSO Location
- Boat Dock
- Boat Ramp
- Canoe Launch
- Fishing
- Playing at Stream Bank
- Swimming
- Wading
- Waterskiing
- Waterskiing (Historical)
- School
- Park Boundary
- Indy Parks' Pool
- Early Action Projects



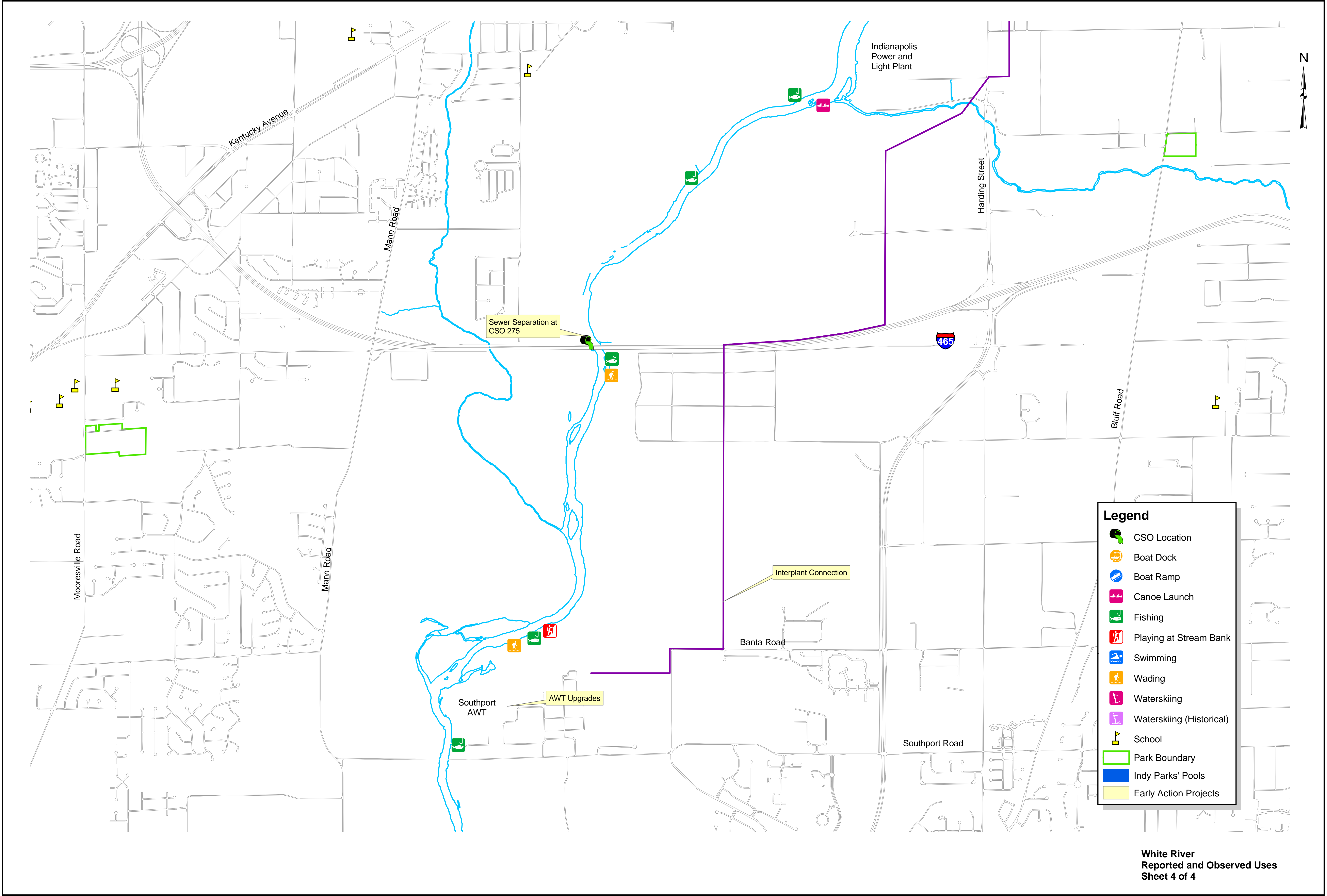
Legend

- CSO Location
- Boat Dock
- Boat Ramp
- Canoe Launch
- Fishing
- Playing at Stream Bank
- Swimming
- Wading
- Waterskiing
- Waterskiing (Historical)
- School
- Park Boundary
- Indy Parks' Pool
- Early Action Projects



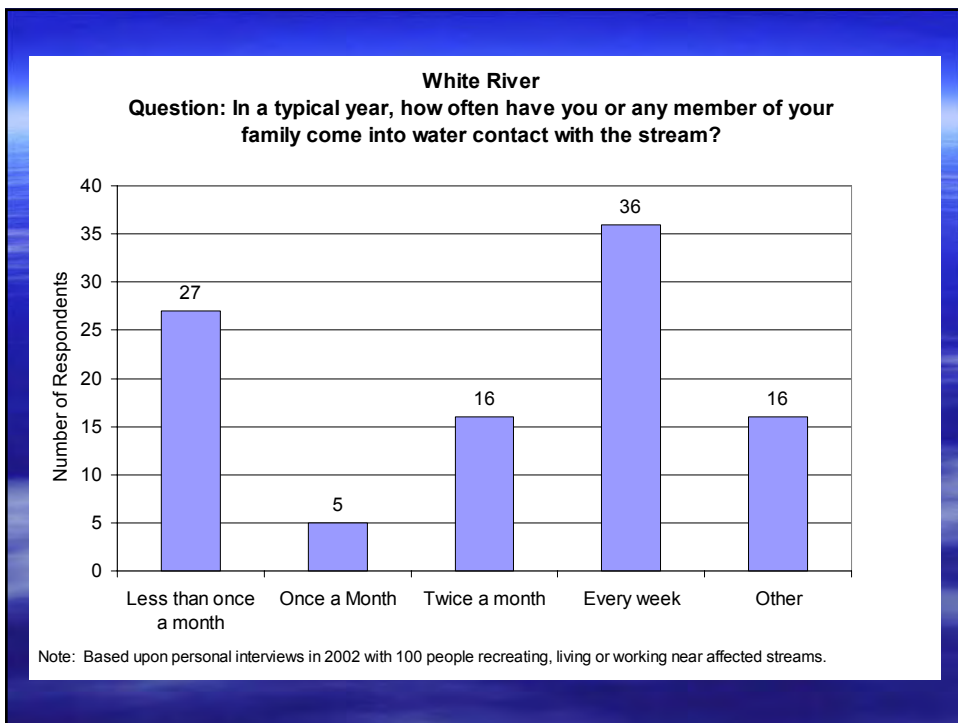
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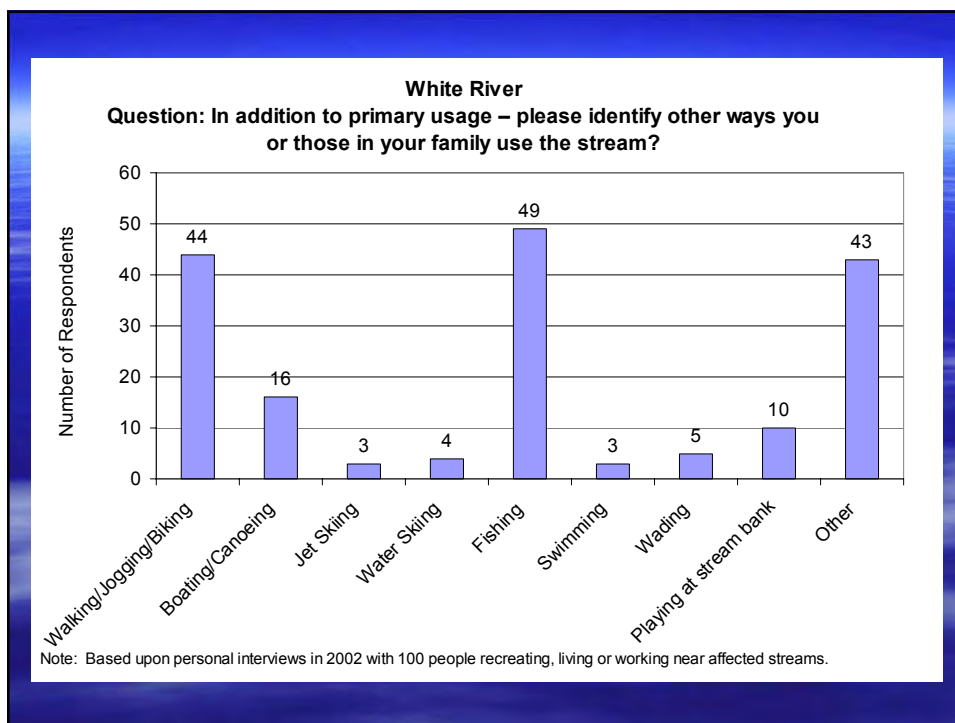
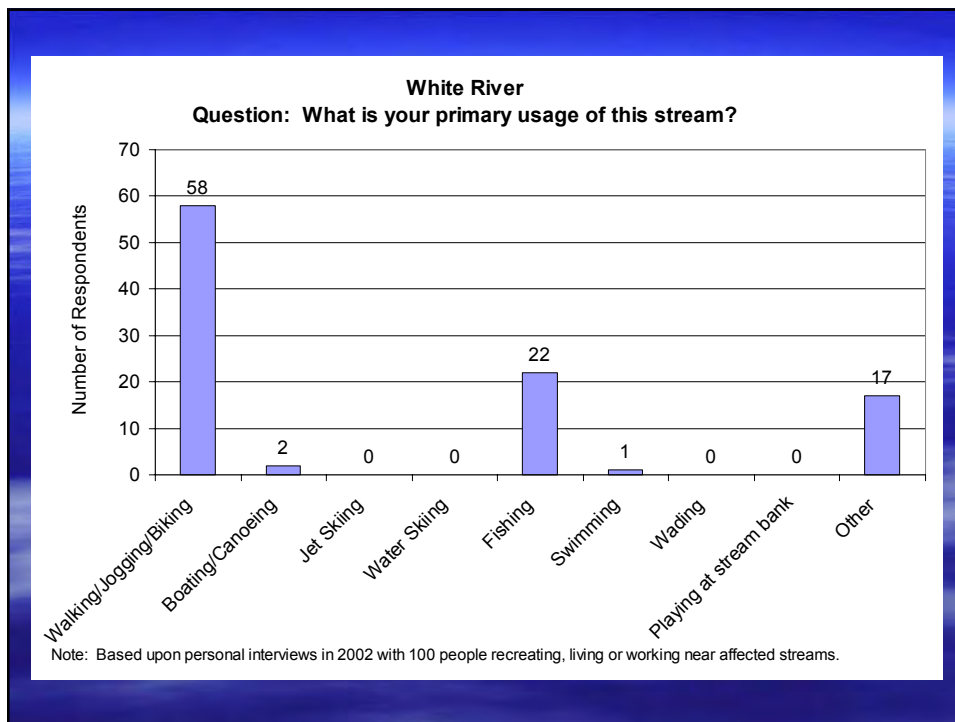
- CSO Location
- Boat Dock
- Boat Ramp
- Canoe Launch
- Fishing
- Playing at Stream Bank
- Swimming
- Wading
- Waterskiing
- Waterskiing (Historical)
- School
- Park Boundary
- Indy Parks' Pools
- Early Action Projects

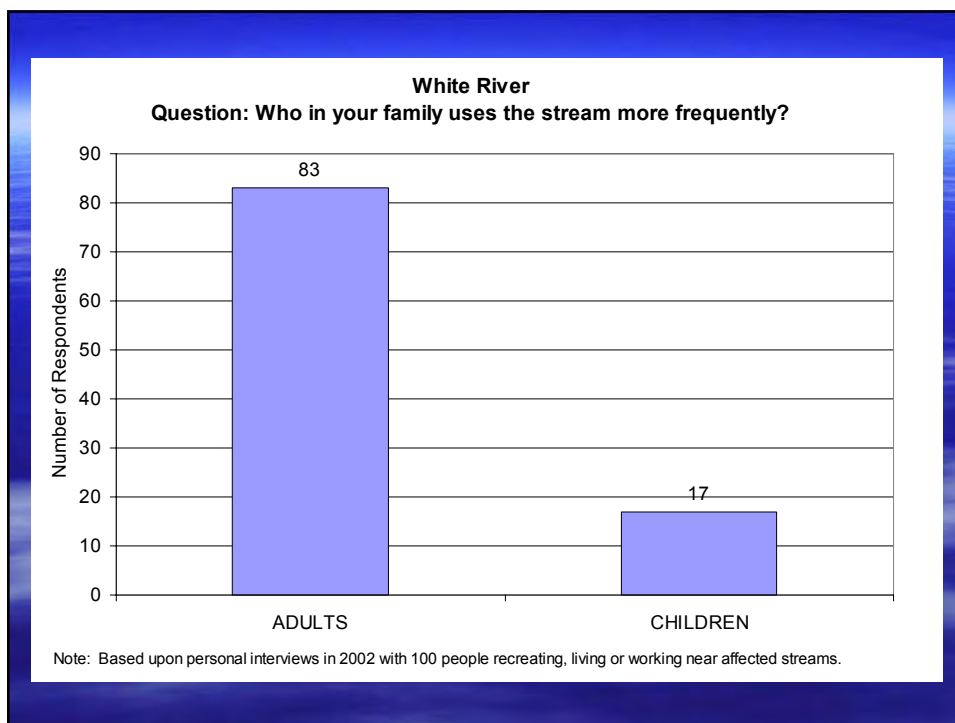
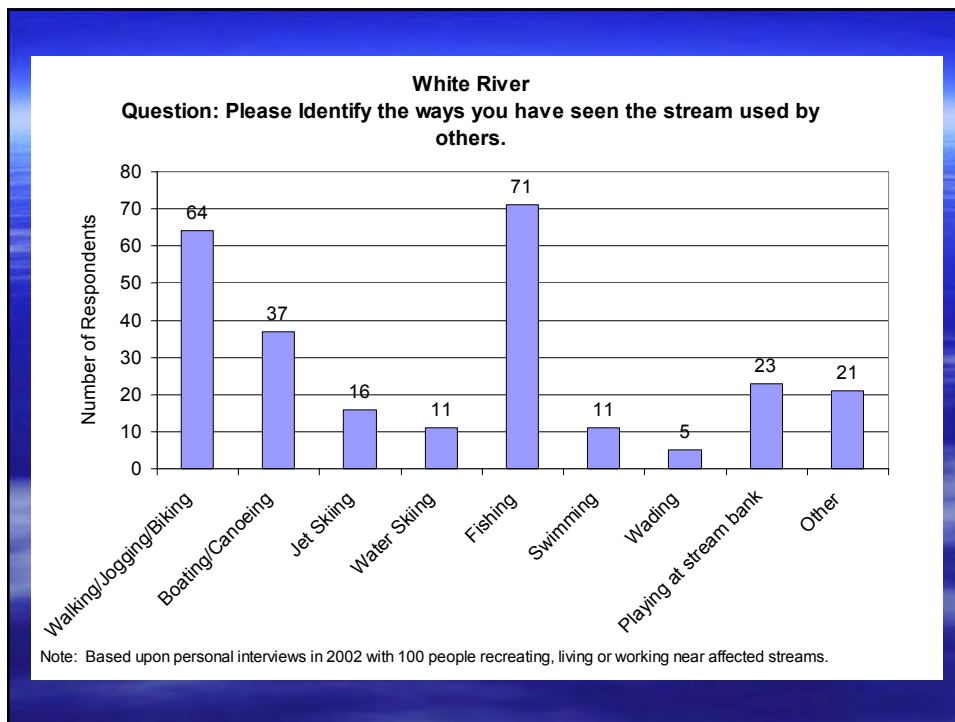


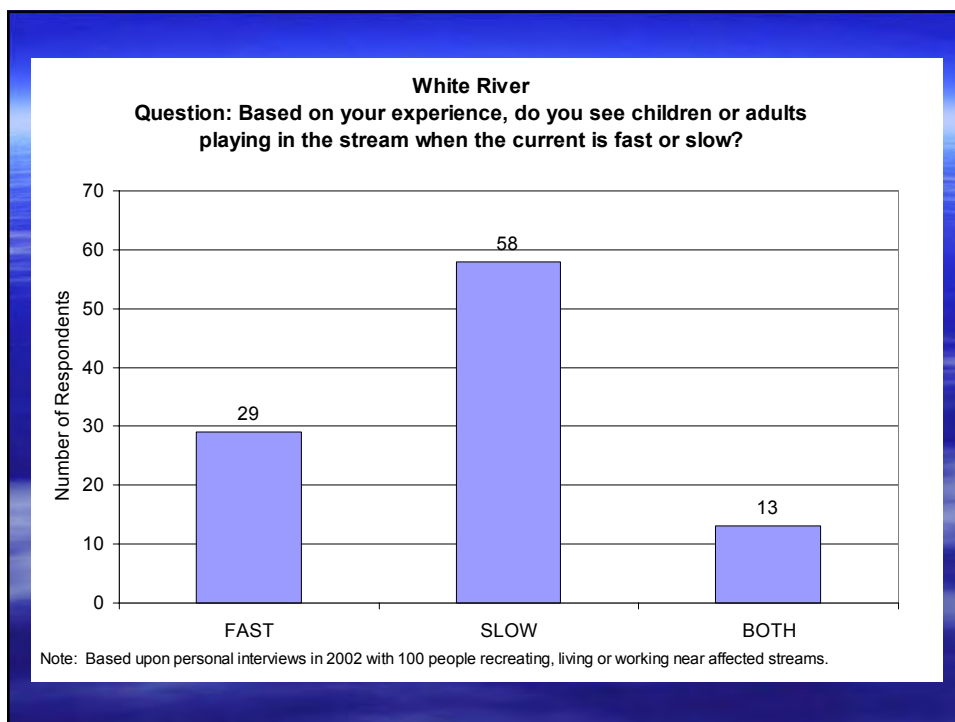
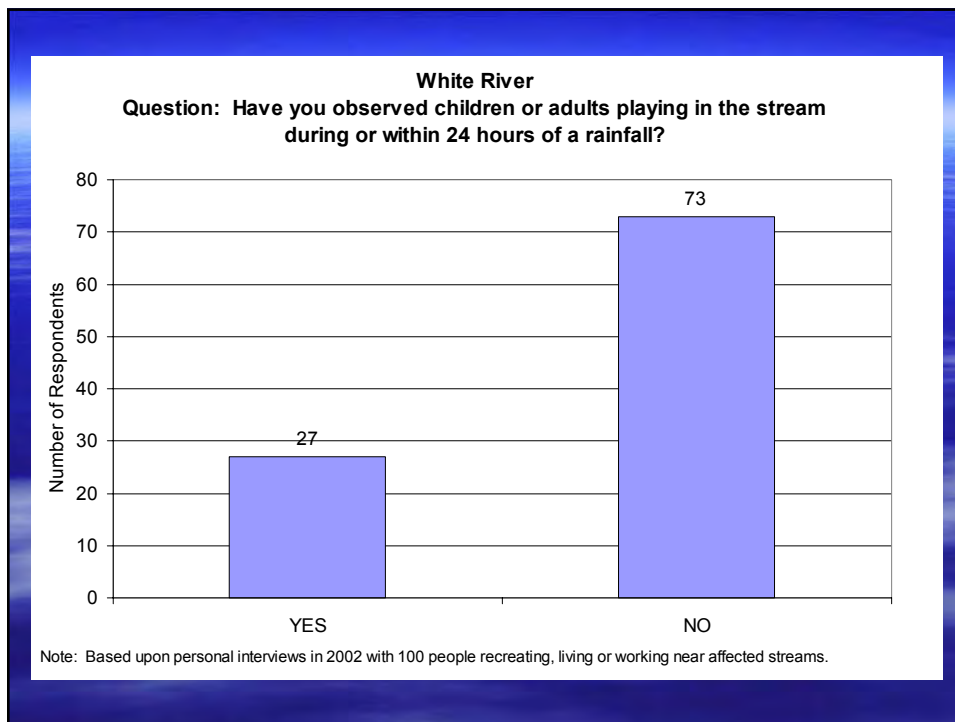
Legend

- CSO Location
- Boat Dock
- Boat Ramp
- Canoe Launch
- Fishing
- Playing at Stream Bank
- Swimming
- Wading
- Waterskiing
- Waterskiing (Historical)
- School
- Park Boundary
- Indy Parks' Pools
- Early Action Projects



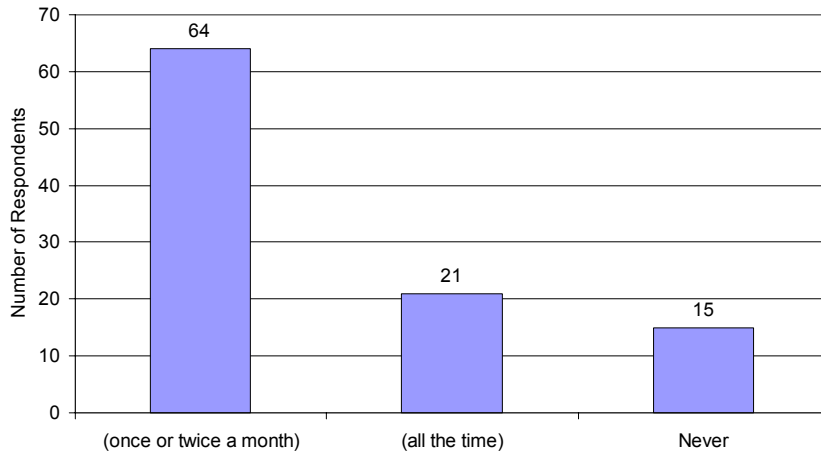






White River

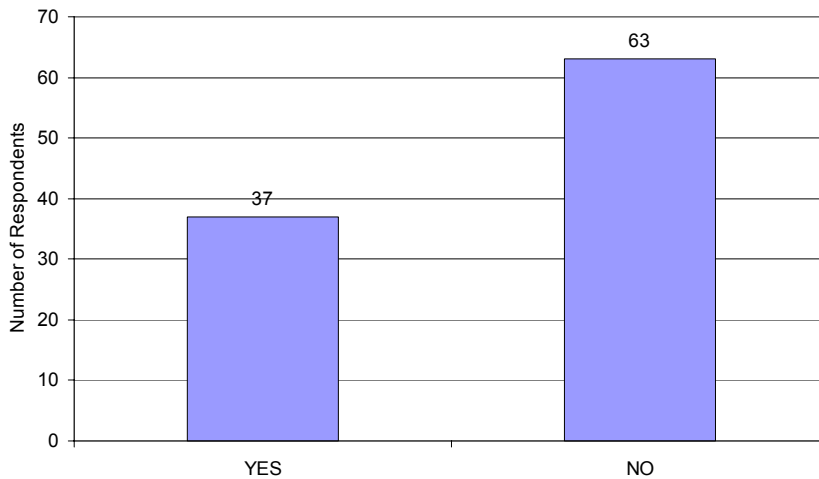
Question: How often would you say you have observed children or adults playing in the stream after a rainfall?



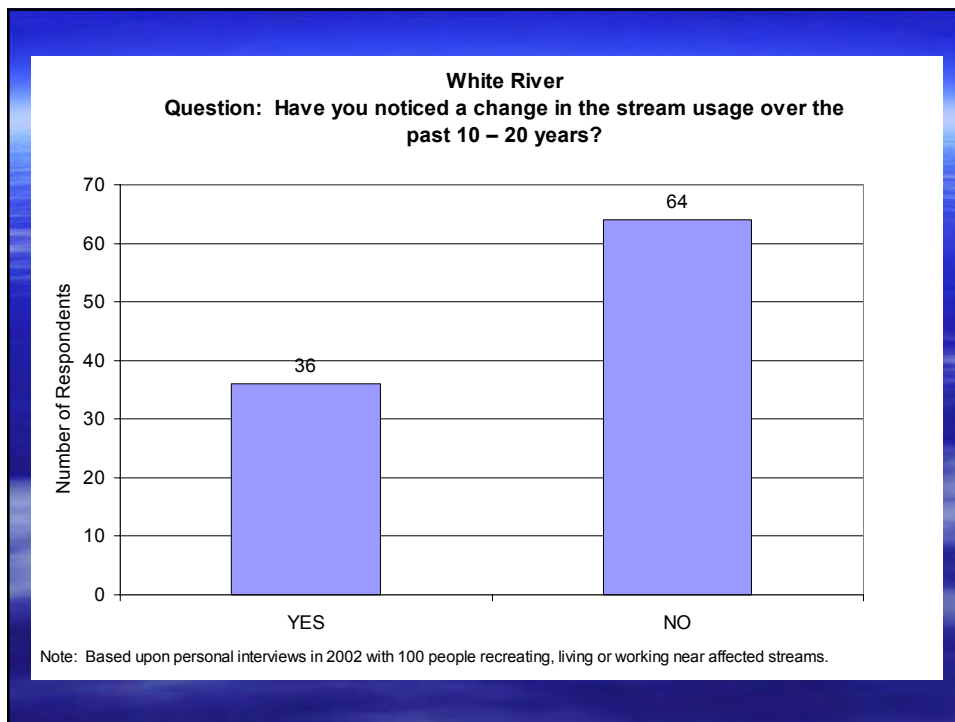
Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.

White River

Question: Are you aware that signs are posted along the streams warning people to stay away because of pollution from sewage?

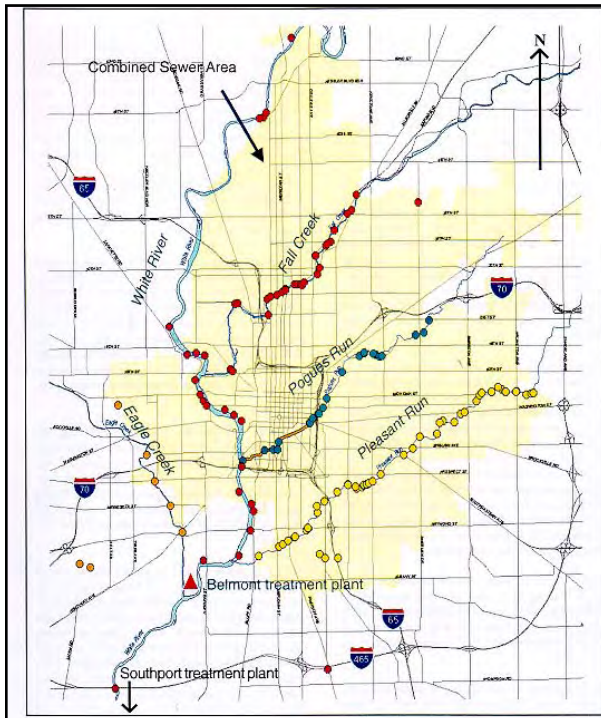


Note: Based upon personal interviews in 2002 with 100 people recreating, living or working near affected streams.



Location of Uses on White River

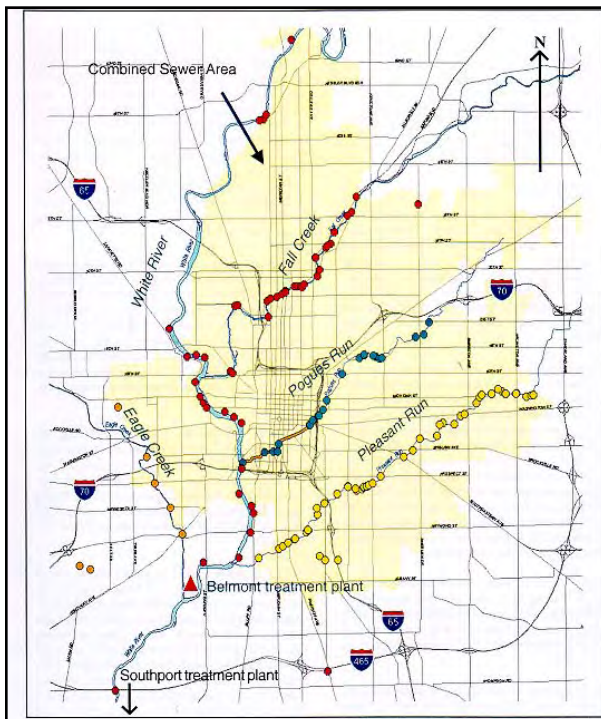
Activity	Location/Direct Respondent	Stream Survey	MCHD
Fishing/Boating	Lake Indy/30 th St. Boat Ramp	X	X
PSB	Highland Trailer Park		
Boating	White River Boat Dock		
Fishing	10 th St. & White River Pkwy		
Wading	Hanna Ave. (1500 E – 4600 S, Lick Creek)		
Fishing	30 th Street		
Fishing	16 th St. Dam		X
Fishing	Riverside & Park		X
Fishing	White River Parkway (N. of 30 th St.)		X
Fishing	R&R Bridge (N. of 10 th St.)		X
Fishing	I-65 Bridge (East & West bank, 56 th & Westfield Blvd.)		X
Fishing	38 th St. Bridge		
Wading	State Ditch (Gadsen St.)		



WHITE RIVER/ Tributaries: **Location Activity** **Direct Respondent**

Cluster of activity: Raymond St. to 5600 N.

1. Boat docks and water depth promote boating.
2. Fishing cluster between 16th St. & 38th St.
3. Lick Creek promotes wading and playing at stream bank, given stream access, depth and close proximity of residences to the water basin.
4. Wading was noted on State Ditch at Gadsen.



WHITE RIVER/Tributaries: **Location Activity** **Direct Respondent**

Fishing/Boating

- † * Lake Indy/30th St. Boat Ramp
- PSB Highland Trailer Park (Cossell Rd. near Floral Park Cemetery)
- Boating White River Boat Dock
- Fishing 10th St. & White River Pkwy
- Wading Hanna Ave. (1500 E – 4600 S, Lick Creek)
- Fishing 30th Street
- Fishing *16th St. Dam
- Fishing *Riverside Park
- Fishing *White River Parkway (N. of 30th St.)
- Fishing *R&R Bridge (N. of 10th St.)
- Fishing *I-65 Bridge (East & West bank, 56th & Westfield Blvd.)
- Fishing 38th St. Bridge
- Wading State Ditch (Gadsen St.)

PSB=Playing at Stream Bank

- † Reported on Stream Survey.
- * Reported to MCHD.

FINAL Survey Results - White River

In a typical year, how often have you or any member of your family come into water contact with WHITE RIVER?

	Total Number	%
Less than once a month	27	27%
Once a Month	5	5%
Twice a month	16	16%
Every week	36	36%
Other	16	16%
TOTALS	100	100%

What is your primary usage of this stream?

	Total Number	%
Walking/Jogging/Biking	58	58%
Boating/Canoeing	2	2%
Jet Skiing	0	0%
Water Skiing	0	0%
Fishing	22	22%
Swimming	1	1%
Wading	0	0%
Playing at stream bank	0	0%
Other	17	17%
TOTALS	100	100%

In addition to primary usage – please identify other ways you or those in your family use the stream.

	Total Number	%
Walking/Jogging/Biking	44	25%
Boating/Canoeing	16	9%
Jet Skiing	3	2%
Water Skiing	4	2%
Fishing	49	28%
Swimming	3	2%
Wading	5	3%
Playing at stream bank	10	6%
Other	43	24%
TOTALS	177	100%

Please identify the ways you have seen the stream used by others.

	Total Number	%
Walking/Jogging/Biking	64	25%
Boating/Canoeing	37	14%
Jet Skiing	16	6%
Water Skiing	11	4%
Fishing	71	27%
Swimming	11	4%
Wading	5	2%
Playing at stream bank	23	9%
Other	21	8%
TOTALS	259	100%

Also, who in your family uses the stream most frequently?

	Total Number	%
ADULTS	83	83%
CHILDREN	17	17%
TOTAL	100	100%

Have you observed children or adults playing in the stream during or within 24 hours after a rainfall?

	Total Number	%
YES	27	27%
NO	73	73%
TOTAL	100	100%

Based on your experience, do you see children or adults playing in the stream when the current is fast or slow?

	Total Number	%
FAST	29	29%
SLOW	58	58%
BOTH	13	13%
TOTALS	100	100%

How often would you say you have observed children or adults playing in the stream after a rainfall?

	Total Number	%
(once or twice a month)	64	64%
(all the time)	21	21%
Never	15	15%
TOTALS	100	100%

Are you aware that signs are posted along the streams warning people to stay away because of pollution from sewage?

	Total Number	%
YES	37	37%
NO	63	63%
TOTAL	100	100%

Age Group	Total Number	%
18-29	32	0%
30-39	31	457%
40-49	23	443%
50-59	7	329%
60+	7	100%
TOTAL	100	100%

Have you noticed a change in the stream usage over the past 10 – 20 years?

	Total Number	%
YES	36	0%
NO	64	56%
TOTAL	100	100%

Chapter 321 BEACHES AND SWIMMING POOLS*

*Cross references: Boats, docks and waterways, ch. 341; streets, sidewalks and public ways, ch. 431.

[Sec. 321-1. Bathing in unguarded areas.](#)

[Sec. 321-2. Conduct generally.](#)

[Sec. 321-3. Entrance and exit.](#)

[Sec. 321-4. Dangerous substances in swimming areas.](#)

[Sec. 321-5. Conduct or play not to interfere with other bathers.](#)

Bathing

Sec. 321-1. Bathing in unguarded areas.

(a) It shall be unlawful for any person to swim or wade in any canal, stream, pit, pond or other body of water or watercourse within the city which is unguarded by a lifeguard who is assigned to guard such area by the owner or operator of such canal, stream, pit, pond or other body of water.

(b) The provisions of subsection (a) shall not apply to pools of the department of parks and recreation or clubs or other private beaches or pools which are guarded by lifeguards, nor to private residential swimming pools maintained by the homeowners.

(c) The first violation in any calendar year shall be subject to admission of violation and payment of the designated civil penalty through the ordinance violations bureau in accordance with chapter 103 of this Code. All second and subsequent violations in the calendar year are subject to the enforcement procedures and penalties provided in section 103-3 of this Code.

(Code 1975, § 7-20)

Sec. 321-2. Conduct generally.

It shall be unlawful for any person to fish, bathe, wash, operate boats in or enter any public waterways, or to send, drive or ride any animal into any public waterways, where not authorized for such purposes. However, the department of parks and recreation may set aside certain places and designate the rules for swimming, wading, bathing, boating and fishing by persons in any such places.

(Code 1975, § 7-21)

Sec. 321-3. Entrance and exit.

Whenever any bathing beach, public bath, swimming or wading pool is enclosed, no person shall enter or leave the same except at the indicated entrances and exits and shall pass through such entrance showers and shall wade through such chemically treated wading water as may be provided at such places before entering or upon leaving.

(Code 1975, § 7-22)

Sec. 321-4. Dangerous substances in swimming areas.

It shall be unlawful to throw, drop, place or deposit on the sands, ground or other surface adjoining bathing beaches or swimming or wading pools, or into the water or the bottom thereof, any glass bottles, broken glass, nails, tacks, wire, crockery, cans or any other sharp or cutting substances, chemicals or things dangerous to bathers or other persons.

(Code 1975, § 7-23)

Cross references: Environmental public nuisances, ch. 575.

Sec. 321-5. Conduct or play not to interfere with other bathers.

No person or group of persons shall conduct themselves in or about any municipal bathing beach or swimming or wading pool by violent racing about, churning and splashing of water, or by throwing balls or other objects or materials, or by playing games in such a manner, or by resorting to any other conduct, any of which does or tends to disturb, annoy, offend or injure other persons either on or near the beach, or in the pool or water, or to interfere with or damage any clothing or property belonging to any other person.

(Code 1975, § 7-24)

CHAPTER 16

STANDARDS FOR PUBLIC SWIMMING POOLS,
PUBLIC SPAS AND BEACHES

Article 1. Definitions. Unless the context specifically indicates otherwise, the meaning of terms used in this ordinance shall be as follows:

Sec. 16-101. "Beach" shall mean any natural or artificial waterway or impoundment or any portion thereof, which is used for swimming or wading purposes and is made available to persons other than an individual for the sole use of his household and house guests .

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Sec. 16-102. "Public Bathing Facility" shall include public swimming pools, public spas and beaches as those terms are defined in this Chapter .

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96] [Gen.Ord. 17-1996(A) Passed 11/20/96 Effective Date 11/1/96]

Sec. 16-103. "Public Spa" shall have the meaning contained in 675 IAC 20-1.1-18(i),. Notwithstanding the exclusion contained in 675 IAC 20-1.1-18(i), for purposes of enforcement of this Chapter, the term "public spa" shall also include spas which are operated for medical treatment or physical therapy under medical supervision.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96] [Gen.Ord. 17-1996(A) Passed 11/20/96 Effective Date 11/1/96]

Sec. 16-104. "Public Swimming Pool" shall , for purposes of enforcement of this Chapter, have the meaning contained in 410 IAC 6-2-1.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96] [Gen.Ord. 17-1996(A) Passed 11/20/96 Effective Date 11/1/96]

Article 2. Construction Permits For Public Bathing Facilities.

Sec. 16-201. No public bathing facilities may be constructed or undergo significant renovation in Marion County, Indiana, unless the owner has first obtained a construction permit from the Health Officer.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Sec. 16-202. An application for a construction permit must be filed with the Health Officer prior to beginning construction. The following shall be submitted with the application:

- (a) A permit fee of forty dollars (\$40.00).
- (b) Proof that a State Plan Release has been issued by the Indiana Department of Fire and Building Services.
- (c) All information required under 675 IAC 20-2-1.

- (d) Plans and specifications certified and sealed by a professional engineer or architect registered in the State of Indiana.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Article 3. Operating Licenses.

Sec. 16-301. No person may operate a public bathing facility in Marion County, Indiana without first obtaining a valid license from the Health Officer. Such license shall be posted in a conspicuous place at the public bathing facility. Only persons who comply with the applicable provisions of The Code shall be entitled to receive and retain such a license. Operating licenses for public bathing facilities shall be valid for a term of one (1) year, beginning March 1st of each year and expiring the last day of February of the next year.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Sec. 16-302.

- (a) The operating license fee for public bathing facilities operating exclusively in any of the months of May through September is one hundred and twenty dollars (\$120.00) per year.
- (b) The operating license fee for public bathing facilities operating beyond the months of May through September is four hundred dollars (\$400.00) per year.
- (c) All license fees shall be payable on or before March 1st of each operational year. A late penalty charge of 25% of the license fee will be imposed for fees submitted after March 1st of the year. The late penalty charge will not apply to pool facilities which were not in operation the previous year.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Article 4. General Requirements For Public Swimming Pools.

Sec. 16-401. Public swimming pools constructed and/or operated in Marion County shall comply with the requirements of 410 IAC 6-2 ,675 IAC 20-1.1 and 675 IAC 20-2, incorporated herein.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Sec. 16-402. Gates in fence enclosures required by 675 IAC 20-2-26(f) shall be equipped with self-closing latches.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Article 5. General Requirements For Public Spas.

Sec. 16-501. Public spas constructed and/or operated in Marion County shall adhere to the requirements applicable to public spas contained in 675 IAC 20-1.1 and 675 IAC 20-3, incorporated herein.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Sec. 16-502. Public spas shall comply with the bacteriological standards and sampling protocol contained in 410 IAC 6-2-7(j) and (k).

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Sec. 16-503.

- (a) The free residual chlorine level in a public spa shall be at least 3.0 mg/l. If other halogens are used, residuals of equivalent disinfecting strength shall be maintained. Required disinfectant levels shall be determined by a method described in the most recent edition of "Standard Methods For The Examination Of Water And Wastewater" (American Public Health Association).
- (b) The requirements of 410 IAC 6-2-7(g) for pH and alkalinity shall be applicable to public spas.
- (c) A test kit for measuring the concentration of the disinfectant, accurate within 0.2 mg/l, shall be used at each public spa:
 - (1) For each public spa which uses chlorine as a disinfectant, the test kit shall cover a minimum range of 0.5 mg/l to 5.0 mg/l measured as free active chlorine and be capable of measuring total chlorine.
 - (2) For each public spa which uses an alternate disinfectant, the test kit shall have the range and accuracy proportionate to 0.5 mg/l to 5.0 mg/l for free active chlorine.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96] [Gen.Ord. 17-1996(A) Passed 11/20/96 Effective Date 11/1/96]

Sec. 16- 504. The operating temperature of public spa water shall not exceed 104 degrees F.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Sec. 16- 505. Continued use of a public spa constructed of wood and installed before January 1, 1983 is allowed only so long as the operation of the public spa otherwise conforms to the provisions of this Chapter and the public spa is maintained in a sanitary condition.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Article 6. Standards For Public Beaches.

Sec. 16-601.

- (a) The sanitation, operation and safety requirements of 410 IAC 6-2-6, 8, 10 and 11 and 675 IAC 20-2-26(f), incorporated herein, shall be applicable to beaches.
- (b) Gates in fence enclosures required by 675 IAC 20-2-26(f) shall be equipped with self-closing latches.
- (c) The bathhouse construction standards contained in 675 IAC 20-2-27 are incorporated herein and shall be applicable to beaches.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Sec. 16-602.

- (a) Beaches shall not be located in areas subject to pollution by sewage.
- (b) The water of a beach shall conform to the bacteriological water quality standards of 327 IAC 2-1-6(d).

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Sec. 16-603. Whenever the beach consists of an area less than the total area of the body of water utilized, the area used for swimming or bathing shall be partitioned with floating lifelines.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Article 7. Closure Of Public Bathing Facilities.

Sec. 16-701.

- (a) A pool operator must close any public bathing facility whenever any of the hazardous conditions listed in Sec. 16-702 occur. Such public bathing facility shall not be reopened for use until the hazardous condition has been corrected.
- (b) If a pool operator fails to close a public bathing facility as required in Sec. 16-701(a), the Health Officer may take appropriate action to ensure that the public bathing facility is closed until the hazardous condition has been corrected.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

Sec. 16-702. Public bathing facilities must be closed when any of the following hazardous conditions occur:

- (a) The amount of residual disinfectant is less than the minimum amounts specified in 410 IAC 6-2-7(a),(b) (public swimming pools) and Sec. 16-503(a) of this Chapter (public spas).
- (b) The microbiological quality of the public bathing facility water is below that specified in 410 IAC 6-2-7(j),(k) (public swimming pools) and Sections 16-502 (public spas) and 16-603 (beaches) of this Chapter.
- (c) The pH of the swimming pool or public spa water does not comply with provisions of 410 IAC 6-2-7(g) and Sec. 16-503(b) of this Chapter.
- (d) The clarity of the public swimming pool water does not comply with the provisions of 410 IAC 6-2-7(i).
- (e) Lifeguards are not on duty as required in 410 IAC 6-2-11(a) (public swimming pools) and Sec. 16-601 (beaches).
- (f) The recirculation system of the public swimming pool or public spa is not functioning properly per 410 IAC 6-2-7(h).
- (g) The potential for transmission of communicable disease or an imminent threat to the public health and safety is present.

[Gen.Ord. 8-1996(A) Passed 6/19/96 Effective Date 6/19/96]

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Executive Summary

Public education and participation on environmental issues is a priority for the City of Indianapolis. The Department of Public Works (DPW) has been sharing information about sewer overflows with citizens for over two years, when we became the first city in the state to notify its citizenry of overflows. We have engaged our citizen advisory committees in the development and evaluation of our program. Since DPW began notification, we have improved our methods for initiating warnings and expanded the number of people who receive the warnings. DPW will continue to update and improve our program.

On May 9, 2003, a new Combined Sewer Overflow (CSO) Public Notification Rule took affect. Indiana CSO communities are required to develop a plan and to implement notification programs. The rule requires CSO communities to notify the public when either a discharge from a CSO outfall is occurring or is imminent, based on actual or anticipated precipitation. The City has been using a predictive, weather based criteria for issuing warnings. This method allows people to plan ahead, by giving warning when overflows are expected within the next 24 hours. This document describes the public notification program that Indianapolis will continue to implement.

The City's Wet Weather Technical Advisory Group assisted with the development and improvement of this program for over two years. They have made suggestions that have improved the accuracy of notification and improved the warning messages. The Wet Weather Technical Advisory and the Mayor's Raw Sewage Overflow Committees were given the opportunity to review and comment on this plan before its submission.

The CSO Public Notification Program for the City of Indianapolis – Marion County has a simple yet very important goal: Inform the public of the potential health risks associated with ingesting CSO affected waters in a timely and reasonable manner that wisely uses public funds. Our program includes a CSO telephone hotline, television and e-mail distribution list that is available 24 hours a day, seven days a week. We have promoted the program via print media, and posted warning signs along affected areas. This plan also describes the offer of signs for private residents and public lands, and other outreach methods; and may be found in Appendix D of the City's CSO Operational Plan (CSOOP).

This is an ever-evolving program, and the plan will be updated accordingly to reflect that. New technologies are being investigated to provide better, quicker and more reliable information. We are evaluating the capabilities and costs of automation. For example, DPW is exploring ways to utilize real-time sensors that monitor fluid levels within the CSO and transmit data via wireless connections. DPW will continue to seek new methods and improvements to the program.

Table 1¹**Surface Drinking Water Contact Information**

Name	Title	Contact Information
Jeff Dieterlen	Director of Production	USFilter P.O. Box 1220 Indianapolis, IN 46202 Office: (317) 263-6411 Mobile: (317) 710-4536 jeff.dieterlen@usfilter.com
Dale Pershing	Manager of Quality and Compliance	USFilter P.O. Box 1220 Indianapolis, IN 46202 Office: (317) 920-6474 Mobile: (317) 710-1342 Pager: (317) 310-2337 Fax: (317) 920-3387 dale.pershing@usfilter.com
Fall Creek Plant		4300 Fall Creek Rd. Indianapolis, IN 46205 Phone: (317) 546-9462 Fax: (317) 546-3144

¹ In 2004, these groups were notified about the program via letter on March 26. This will occur annually.

**City of Indianapolis – Department of Public Works
Combined Sewer Overflow (CSO) Public Notification Program
Standard Operating Procedures (SOP) for Overflow Warnings**

Program Objective

The overall objective and goals of the City of Indianapolis' Combined Sewer Overflow (CSO) Public Notification Program are to:

- Notify affected and interested persons when sewage overflows are likely to occur;
- Educate affected and interested persons as to the health hazards and impacts associated with sewage in our waterways;
- Enable affected and interested persons to take the appropriate steps to protect themselves from hazards associated with sewage in waterways; and
- Comply with 327 IAC 5-2.1 (Combined Sewer Overflow Public Notification Rule).

Background

The City of Indianapolis – Marion County has had a CSO notification program since spring 2002. Since then, the program has been continually improved. The City utilizes four (4) methods of notifying the public, including telephone hotline, e-mail listserv, warning signs and television. Notification will be timely, reliable, and accurate for all interested individuals. This SOP may be updated and modified, as needed. These methods will alert interested citizens of potential and/or actual CSO discharges into the waterways of Marion County.

At any time night or day, interested parties can call the telephone hotline and/or sign up for the e-mail listserv via the City's website at <http://www.indygov.org/dpw>. Further, signs are posted at outfall points and throughout the county at various locations including parks and public access points.

Notification Methods

As discussed above, there are four (4) CSO public notification methods being implemented by the City:

- 24-hour telephone hotline that has an up-to-date message noting whether overflows are expected or have occurred in the past 72 hours.
- E-mail listserv of registered individuals, who are provided a warning message that notes overflows are expected and how to protect yourself.
- Warning signs are posted by both the City and the Marion County Health Department, which are located where people are most likely to be warned.
- The City's government access television station runs a television warning when overflows are expected.

Method One: Telephone Hotline – (317) 327-1643

The telephone hotline will notify citizens of the current conditions of the waterways in the CSO area. There will be two (2) announcements with one being standard (*default*) for

non-precipitation events and the other to be used when ¼-inch of precipitation is forecasted.

The telephone **default message** is as follows:

“You have reached the Indianapolis sewage overflow information line. When [it rains] or [snow melts], the sewers in the older parts of the city can overflow sending untreated rainwater and sewage into our waterways. Today, weather conditions indicate that sewage overflows are not likely to occur. Even so, contaminants in the streams could make you sick. Even in dry weather, it is best to avoid contact with urban streams and teach children to stay away from affected waterways. The City is implementing many projects to improve our waterways. Thank you for calling.”

The telephone **warning message** is as follows:

“There is a sewage overflow warning today. You have reached the Indianapolis sewage overflow information line. When [it rains] or [snow melts], the sewers in the older parts of the city can overflow sending untreated rainwater and sewage into our waterways. Today, weather conditions indicate a strong possibility that overflows will occur or have occurred in the past 72-hours. Please avoid all contact with water near combined sewers, especially the days after a rain[snow]storm. Signs are posted along our waterways to identify more than 130 areas where contact with the water could be hazardous. The City is implementing many projects to improve our waterways. Thank you for calling.”

Method Two: E-mail Listserv

Citizens and other interested organizations as well as schools and news media are invited to sign up to receive notices via e-mail with the option to be removed at any time at the City’s website (<http://www.indygov.org/dpw>). No e-mail messages will be sent for standard, non-warning days. The e-mail notification will automatically include the following message and an option for the receiver to remove his or her e-mail address from the notification list.

The e-mail **warning message** is as follows:

“***SEWAGE OVERFLOW WARNING TODAY***

When it rains or snow melts, the 100-year old sewers in the older parts of Indianapolis can overflow sending untreated sewage and rainwater into our waterways. Today, weather conditions indicate a strong possibility that precipitation may cause overflows to occur or that overflows have occurred in the past 72 hours. If the precipitation occurs as snow, overflows may occur days or weeks later, when temperatures near or exceed freezing.

Please avoid all contact with water downstream of combined sewers. Swallowing or hand-to-mouth contact with sewage-contaminated water could make you sick. Signs are posted along our waterways to identify the more than 130 combined sewer outfalls and areas where contact with the water could be hazardous to your health. Even in dry weather, it is best to avoid contact with urban streams and teach children to stay away.

The affected areas include:

White River downstream from 56th Street
Fall Creek downstream from Keystone Avenue
Eagle Creek downstream from Michigan Street on Little Eagle Creek
Pogues Run downstream from 21st Street
Pleasant Run downstream from Kitley Avenue
State Ditch downstream from Southern Avenue
Lick Creek downstream from Madison Avenue
Bean Creek downstream from I-65

The City encourages you to take the following protective actions:

- Avoid contact with urban streams, especially during and three days after rain or snowmelts.
- Alter recreational activities to ones that do not contact water. For example, try walking or biking along a stream rather than swimming, wading or water skiing.
- **Always** wash your hands after contacting water in urban streams, especially before eating, drinking, smoking, or preparing food.
- Use a waterless hand sanitizer at outings that occur near urban streams.

Clean waterways are a priority for the City of Indianapolis. The City is implementing many projects to improve our waterways and reduce and eliminate sewage overflows. The City expects to invest at least \$1 billion to reduce the affects of raw sewage including modernizing the wastewater treatment plant and improving the sewage collection system.”

Method Three: Warning Signs

Warning signs are posted throughout CSO area warning individuals of contaminated water. For more detailed information on the warning signs, please refer to the “Signs” section of the City’s CSO Public Notification Program Plan.

Method Four: Television

Earlier this year, a representative from the City’s government access television station joined the e-mail listserv. Whenever a CSO warning is initiated, this individual receives the warning email and places a warning slide on Channel 16. As with the e-mail warning and telephone hotline, the television warning slide remains active and on the air for the duration of the 72 hour warning period. The warning slide notes that overflows are expected, lists the CSO impacted waterways and the telephone hotline number.

Notification Procedure

The City of Indianapolis – Department of Public Works (DPW) will implement the following procedure to notify individuals of potential combined sewer overflows:

- **Step 1** – DPW will monitor weather reports from our contracted weather service.
- **Step 2** – If the weather report indicates precipitation² within the next 24-hours, then skip to **Step 3**. If there is **no precipitation** predicted, or less than ¼ of an inch of precipitation is predicted for the next 24 hour period in DPW’s

² As a guideline, 2.5 inches of snow is roughly equivalent to .25 inches of rain.
(<http://www.weather.com/encyclopedia/winter/precip.html>, 10/6/03).

forecasted reports, the *default message*, which can be seen under “Notification Methods”, will remain on the telephone hotline and **no** e-mail will be sent.

- **Step 2** (a) – If the telephone hotline message currently holds the *warning message* and 72-hours have passed without precipitation in Marion County, DPW will change the message from warning to *default*.
- **Step 3** – If a **minimum of a ¼-inch of precipitation** is predicted and the probability for precipitation is 50% or greater for Marion County in the next 24 hour period, DPW will:
 - (a) Send the warning e-mail to the City’s listserv. The e-mail warning text will be automatically inserted, however, DPW will insert the correct date in the subject line. The text can be seen under “Notification Methods”. DPW will send the e-mail to streams@elists.indygov.org indicating “***Streams Warning – [the date that rain is predicted]***” in the subject box.
 - (b) Change the telephone hotline message from the *default message* to the *warning message* by recording a new message. The text can be seen under “Notification Methods” and must remain in place for at least 72 hours (3-days) after the last precipitation event. This may occur several days after the original *warning message* was initiated. The hotline message must be recorded in a professional voice, and all words clearly articulated.
 - (c) If additional precipitation occurs on the second day of a 72-hour warning period, leave the *telephone warning message* on the hotline for 72 hours after the last precipitation event. If additional precipitation occurs on the third day after the email warning was sent, then send another *email warning message* and leave the *telephone warning message* on the hotline for another 72 hours.
 - (d) In addition to precipitation triggered warnings described above, DPW may occasionally send a warning e-mail and record a *warning message* if warranted.
- **Step 4** – Seventy-two (72) hours after the *warning messages* are activated, if no additional precipitation was received in Marion County, DPW will return the telephone hotline message to the *default message*.
- **Step 5** – At the end of each month, the list of days when notification warnings were issued will be documented in the Discharge Monitoring Reports (DMR). A copy of the monthly DMRs will be kept at the two (2) advanced wastewater treatment plants.

**City of Indianapolis – Department of Public Works
Combined Sewer Overflow (CSO) Public Notification Program**

Outreach Efforts

Since the program's inception in spring of 2002, the City of Indianapolis' Combined Sewer Overflow (CSO) Public Notification Program has reached a multitude of individuals. The Department of Public Works (DPW) took steps to reach as many people as possible. We are enabling the public with the information they need to further protect themselves and their families from possible harm.

Summary of Methods Used to Notify the Public about Our Program:

- Citizen advisory groups
- Public meetings
- City attended events such as Black Expo, Earth Day, etc.
- City Website at [Indygov.org](http://indygov.org)
- Letters to community groups
- Warning signs
- Water bill inserts to homes and businesses
- TV commercials (when funds are available)
- TV warning message of overflows
- Letters to recreational providers
- Letters to local, state and federal governments entities with property on affected waters, including health, parks, and natural resource departments.
- Letters to schools located on affected waters
- Public notices in the Indy Star Newspaper
- Newsletters, Fact Sheets, school programs and other outreach by Indy's Clean Stream Team.

These methods to make the public aware of our program are described in more detail below.

People or Groups Invited to Register or Call for Notification of Overflows

Members of the City's Wet Weather Technical Advisory Committee (WWTAC) were involved in the development of the program, including both method and message development. This group represents industry, the Marion County Health Department, Improving Kid's Environment, the Audubon Society, the Urban League, Marion County Alliance of Neighborhood Associations, Sierra Club, and Friends of the White River. As stakeholder group representatives, these individuals are encouraged to share the information with other members of their organizations. All WWTAC members were encouraged to join the e-mail listserv and were provided the telephone hotline number.

Additionally, DPW invited and encouraged citizens to participate in the CSO Public Notification Program via public meetings, the City's website, letters to over 500 neighborhood associations and community groups, and via signs posted throughout Marion County. Moreover, roughly 242,000 homes and businesses received information regarding the program via their water bill since 2002. DPW intends to continue using these and other very effective means of reaching the public.

In the summers of 2002 and 2003, DPW produced and ran a 30 second commercial and ticker on the SkyTrak Weather Network. The commercial promotes the CSO Public Notification Program, clean water and protecting the environment. This commercial is available for future use as well, depending on available resources.

The City takes notification efforts one step further by contacting important stakeholders who need to know about our program. These include schools, downstream communities and appropriate government organizations via letter to share the efforts and procedures used in Indianapolis. In all, approximately 670 schools, day care centers and day ministries; six (6) downstream health departments³; seven (7) county parks departments and/or government offices⁴; three (3) DNR district headquarters⁵; and one (1) downstream state park⁶ are informed of the City's efforts and invited to sign up for notification. The local drinking water facility was sent an invitation too.

As a result of our efforts to inform people of the program, our list of e-mail recipients includes members of the Sierra Club, the Marion County Health Department, neighborhood association members, US Filter, and the Indianapolis Star newspaper in addition to many others. The outreach efforts continue to pay off as the number of e-mail listserv recipients steadily increases on a monthly basis from roughly 90 in June of 2002 to nearly 280 in October 2003 and 420 in June 2004.

As a means to gauge the effectiveness of the City's first year of the CSO Public Notification Program, a year-end survey⁷ was developed to measure and assess the overall thoughts and effectiveness of the program. Survey respondents noted that the CSO Public Notification Program was effective, and their 90% approval rating indicated an interest in the continuation of the program. Additionally, 68% of the respondents noted what they liked most about the program was the City's recognition of the problem and the immediate, up-to-date information that was provided, allowing for greater public awareness. Additional surveys may be conducted depending on available resources.

Continuing Outreach Efforts

Every year, DPW attends hundreds of meetings or events that members of the public attend, organize or support. Events such as the Black Expo, Earth Day festivities and other large public events provide DPW the opportunity to reach hundreds and sometimes thousands of people in a short time. We also sponsor or attend public meetings, neighborhood association meetings, environmental justice meetings, and multiple advisory group meetings. All of these avenues allow DPW to share information about the CSO Public Notification Program.

The Indianapolis Clean Stream Team, a DPW program, produce reports, quarterly newsletters and fact sheets on a variety of water quality topics. These publications are another vehicle to inform the public of the notification program. In addition, DPW will continue to mail program information to every residential and commercial water users

³ Downstream Counties included were Johnson, Morgan, Owen, Greene, Knox, and Daviess Counties.

⁴ Downstream Parks or Government Office included were Johnson, Morgan, Owen, Greene, Knox, and Daviess Counties and the City of Martinsville.

⁵ Included were District 5-7 in Cloverdale, Nashville, and Winslow respectively.

⁶ McCormick Creek State Park.

⁷ The survey was disseminated on January 6, 2003 to those individuals on the e-mail listserv as well as being placed on DPW's website and available via the telephone hotline.

with their water bills at least once a year. DPW also utilizes a webpage, <http://www.indygov.org/dpw>, as a way to reach the public 24 hours a day, seven days a week. We continue to give the DPW website a new look and new information. The link to sign up for this program is a link on the Indygov.org homepage.

DPW will send outreach materials such as letters to the groups or individuals noted on the drinking water, media, downstream, school, and recreational contacts lists (See Tables 1, 2, 3, 4, and 5 for outreach contact information). Included will be the telephone hotline number, the website to register to receive email notification, and other pertinent information. The contact will be made each year before March 31st.

Public Notices

The City of Indianapolis – Department of Public Works (DPW) will provide public notice to the Indianapolis Star newspaper, the largest media source in Central Indiana, for distribution to the affected public and other interested persons. A media approach is being used because of the thousands of landowners on or adjacent to affected waters. Individual contact to each landowner would be prohibitively costly and extremely time consuming. The notice will be consistent with Indiana Administrative Code 5-3-1. Notification will occur annually before March 31st.

The notices will provide information to allow people to sign up for the City's CSO Public Notification Program as well as provide the telephone hotline number. Notices and letters to the downstream communities' county health departments will also provide offers of signs to landowners with property on or adjacent to affected waters.

Notification can be requested at any point throughout the course of the year via DPW's website, <http://www.indygov.org/dpw>.

Table 2⁸

Media Contacts

County	County-Seat	Media Outlet Address/Web Address	Contact
Marion	Indianapolis	<u>Indianapolis Star</u> 307 N. Pennsylvania St. Indianapolis, IN 46204 Website: http://www.indystar.com	Email: publicnotices@indystar.com ⁹

⁸ The media was used to provide the public awareness of program and offer of signs to the affected public. This will occur annually.

⁹ The Indianapolis Star must receive public notices by noon two days prior to when the notice is to be advertised.

Table 3¹⁰Downstream¹¹ Contacts

County	County-Seat/River Town	Government Office Address/Phone	Officer
Marion	Indianapolis	Marion County Health Department 3838 N. Rural St. Indianapolis, IN 46205-2930 (317) 221-2266 (phone) (317) 221-2288 (fax) Website: http://www.mchd.com/	Virginia A Caine, MD
	Rocky Ripple	Rocky Ripple Town Hall 930 W. 54 th St. Rocky Ripple, IN 46208 (317) 257-7962	Carla Gaff- Clark
Johnson	Franklin/Smith Valley	Johnson County Health Department 86 W. Court St. Franklin, IN 46131-2345 (317) 736-3770 (phone) (317) 736-5264 (fax) Website: http://www.co.johnson.in.us/civil/health.html	Craig A Moorman, MD
Morgan	Martinsville/Waverly, Exchange, Paragon	Morgan County Health Department 180 S. Main St., Suite 252 Martinsville, IN 46151-1988 (765) 342-6621 (phone) (765) 342-1062 (fax)	John L. Reynolds, Acting
		Morgan County Government Offices 180 S. Main St., Suite. 112 Martinsville, IN 46151 (765) 342-1007	
		City of Martinsville City Hall Martinsville, IN 46151 (765) 342-2861	

¹⁰ Entities were notified about the program and offered signage via letter on March 26, 2004. This will occur annually.

¹¹ Downstream contacts include those government offices that have been contacted with information about the program and encouraged to register for the notifications.

County	County-Seat/River Town	Government Office Address/Phone	Officer
Owen	Spencer/Gosport, Freedom, Farmers	Owen County Health Department Courthouse 1st Floor Spencer, IN 47460-1791 (812) 829-5017 (phone) (812) 829-5044 (fax)	John Stearley, MD
		Owen County Government Offices 90 N. West St. Spencer, IN 47460 (812) 829-3213	
Greene	Bloomfield/Worthington, Newberry, Marco	Greene County Health Department 217 E. Spring St., Suite 1 Bloomfield, IN 47424-1469 (812) 384-4496 (phone) (812) 384-2037 (fax) Website: http://www.bloomfield.lib.in.us/project1/greene_county_health_department.htm	Frederick R Ridge, MD
		Greene County Courthouse Room 104 Bloomfield, IN 47424 (812) 384-2020	
Daviess	Washington/Elnora, Plainville, Maysville	Daviess County Health Department 303 E. Hefron St. Washington, IN 47501-2794 (812) 254-8666 (phone) (812) 254-8643 (fax)	Robert H Rang, MD
		Daviess County Government Offices 200 E. Walnut St. Washington, IN 47501 (812) 254-8675	
Knox	Vincennes/Sanborn, Edwardsport, Bicknell, Iona, Decker	Knox County Health Department 624 Broadway St. Vincennes, IN 47591-2091 (812) 882-8080 (phone) (812) 882-5625 (fax)	Ralph J Jacqmain, MD
		DNR Conservation Office ¹² District 5 Headquarters 1317 W. Lieber Rd., Suite 2 Cloverdale, IN 46120 (765) 795-3534	Lt. Robert McIntire

¹² Affected areas of the White River flow through this DNR District.

County	County-Seat/River Town	Government Office Address/Phone	Officer
		DNR Conservation Office ¹³ District 6 Headquarters P.O. Box 266 Nashville, IN 47448-0266 (812) 988-9761	Lt. Dennis Koontz
		DNR Conservation Office ¹⁴ District 7 Headquarters 2310 E. State Rd. 364 Winslow, IN 47598 (812) 789-9538	Lt. Scott Wilson

¹³ Affected areas of the White River flow through this DNR District.

¹⁴ Affected areas of the White River flow through this DNR District.

Table 4¹⁵

Marion County School Contacts

School	Address	Principal	Zip	Township	Tributary
Baptist Academy	2565 Villa Ave.	Barbara Padgett	46203-4499	Center	Lower White River
IPS #020 Otis E. Brown	1849 Pleasant Run Pkwy. S Dr.	Roberta Lynn Henderson	46203-2006	Center	Lower White River
IPS #042 Elder W. Diggs	1002 W. 25 th St.	Minetta Richardson	46208-5330	Center	Upper White River
IPS #101 HL Harshman	1501 E. 10 th St.	Linda Casey	46201-1909	Center	Lower White River
IPS Horizon Alternative School	1401 E. 10 th St.	Jethro Knazze	46202-1462	Center	Lower White River
IPS #047 Thomas A Edison	777 S. White River Pkwy. W Dr.	Patricia Bolanos	46221	Center	Lower White River
IPS Arsenal Technical	1500 E. Michigan St.	Peggy Clark	46201-3098	Center	Lower White River
IPS Emmerich Manual	2405 Madison Ave.	Kenneth Poole	46225-2106	Center	Lower White River
IUPUI	815 W. Michigan St.		46202	Center	Upper White River
Christian Theological Seminary	1000 W. 42 nd St.		46208	Washington	Upper White River
Butler University	4600 Sunset Ave.		46208	Washington	Upper White River
LPP & Arlington Elementary #2	6040 E. Pleasant Run Pkwy. S Dr.	Teresa Bachus-Bray	46219-6039	Warren	Lower White River
IPS Howe	4900 Julian Ave.	John Takacs	46201	Center	Lower White River
Capitol City SDA School	2143 Boulevard Pl.		46202	Center	Lower White River
C 1 Prof. Training Center	3603 E. Raymond St.		46203	Center	Lower White River
Indiana Higher Education	714 N. Senate Ave.		46202	Center	Fall Creek
Ivy Tech State College	1 W. 26 th St.		46208	Center	Fall Creek
School of SPEA	334 N. Senate Ave.		46204	Center	Lower White River
Montessori Centres Inc	563 W. Westfield Blvd.		46208	Washington	Lower White River
Irvington Preschool	345 N. Kitley Ave.	Pamela Maki	46219	Warren	Lower White River
Our Savior Lutheran Academy	261 W. 25 th St.	Felix Renteria	46208	Center	Lower White River

¹⁵ These are schools located within 200 yards of an affected waterway. Entities were notified about the program and offered signage via letter on March 26, 2004. This will occur annually. These areas were also evaluated for warning signs, and were posted as appropriate.

Table 5¹⁶**Recreational¹⁷ Contacts**

Business Name	Address/Phone
Indy Parks and Recreation	Michael Krossschell 200 E. Washington St., Suite 1821 Indianapolis, IN 46204 (317) 327-5725
Romona Canoe Rental	Romona Rd. Spencer, IN 47460 (812) 829-0120
Johnson County Parks Department	P.O. Box 246 Franklin, IN 46131 (812) 526-6809
Knox County Parks Department	P.O. Box 1316 Vincennes, IN 47591 (812) 882-4316
McCormick Creek State Park	Route 5, Box 282 Spencer, IN 47460 (812) 829-2235

¹⁶ Entities were notified about the program and offered signage via letter on March 26, 2004. This will occur annually.

¹⁷ These include known access points, canoe rentals and parks south of Marion County along the White River.

City of Indianapolis – Department of Public Works Combined Sewer Overflow Public Notification Program

Signs

In the mid to late 1990's the City of Indianapolis – Department of Public Works (DPW) posted nearly 130 combined sewer overflow (CSO) notice signs at the various outfall points and some bridges within the city. The exceptions to this are those outfalls discharging into the Pogues Run Tunnel, which is inaccessible to the public. The signs inform the public that a CSO outfall is in the vicinity, that water can become polluted during weather events, and how to contact the Mayor's Action Center. (See Figure 9 and Table 6 for existing CSO warning sign locations.)

DPW posted additional signs in 2002 to inform the public of the City's public notification program. These signs read, "For current information on water quality and sewer overflows, call the Sewer Information Hot Line at 327-1643 or visit online www.indygov.org/dpw." Like the notice signs, the additional verbiage signs were posted at each outfall with an accessible location throughout the CSO area. (See Figure 2 for CSO outfall locations.) This new sign informs the public about how they can receive current information on water quality by providing them with the sewer overflow telephone hotline number as well as DPW's web address where they can sign up for e-mail notification. (See Figure 6 for warning sign examples.)

In conjunction with DPW's efforts, the Marion County Health Department (MCHD) has warning signs placed at parks, greenways and public access points throughout the county. Together, there are approximately 160 areas where signs have been posted. (See Figure 7 and Table 7 for an example MCHD warning sign and locations.)

Posting of Signs within the CSO Area

In 2004, DPW and MCHD joined forces using a joint sign that contains logos and contact phone numbers for each department. This warning sign is the first to include Spanish. The City of Indianapolis' Mayor's Action Center phone number is displayed with "Se habla Español", letting Spanish speaking persons know that there is an operator available who also speaks Spanish. Additionally, the text "Caution! Sewage Pollution. Keep out of the water," is provided in both English and Spanish.

Moreover, this sign is short, simple and easy to understand. It contains universal symbols for no swimming, no wading and wash your hands; the CSO outfall number (where appropriate); and a general warning informing individuals of sewage pollution and that contact with the water could be hazardous. (See Figure 8, for the new warning sign.) Because the messages on the various signs are equivalent and to save resources and materials, the newer signs will be used at newly identified public access points including bridges, parks and schools. The existing signs currently posted at CSO outfalls and by MCHD will continue to be used until the current sign supply stock has been exhausted, with exception to those signs in dire need of replacement due to graffiti or weathering. The current signs can be seen in Figures 6 and 7.

Although signs have been posted at outfall locations, some bridges, parks and public access points, and some schools, there are additional areas that DPW has evaluated for signage. (See Figure 3 and 4 for public access and bridge and greenway locations.) These locations include bridges and additional schools throughout the affected area that

provide the public with direct access to affected water. (See Figure 10 and Tables 8, 9, 10 and 11 for areas evaluated for signage.)

Signs will be posted at appropriate locations as needed by April 15, 2004, weather permitting. Each year thereafter, DPW and MCHD will work together to maintain signs at the appropriate locations. An annual check for missing and damaged signs will occur each year before April 15th weather permitting.

Areas to Evaluate for Potential Signage

Several areas have been designated as potential locations for CSO warning signs. These areas were determined from the Marion County GeoSpatial Information Services (GIS) database and aerial photography. This data is used to assist with various policies and planning throughout the city and county in addition to being utilized for regulatory documents. In addition, the areas evaluated included areas where citizens have told us of areas that may be used by the public¹⁸. The data were verified via field inspection for access to the water. Once verified, the potential sign locations were geocoded and added to the GIS database. (See Figure 10 for areas evaluated for potential signage.)

For most properties it was easy to determine if they were on or adjacent to affected streams, with the exception of schools. The team determined that schools should be considered “affected” if their property lines came within 200 yards of a CSO affected waterway (see Figure 3; Table 8). This was based upon a reasonable assumption that students who attended a school within 200 yards of a CSO affected waterway could have access to the water.

DPW evaluated areas identified as potentially hosting a warning sign. The 180 areas evaluated for signs included schools, bridges, boat docks and ramps and canoe launches and other public access areas located on or adjacent to affected waters. DPW recommended 62 areas for reevaluation as potential sign locations. (See Figure 10 for areas evaluated for potential signage.) However, some of the potential areas where new signs may be posted are not on City rights-of-way. DPW contacted the appropriate property owners to determine if posting a warning sign will be permitted. A map of locations where signs were posted is being developed. There are over 230 warning signs posted in Marion County.

Criteria for determining locations of warnings signs were: Ease and ability to access affected waters, ownership of the land, presence and distance to an existing sign, and ability to inform the greatest number of people. Signs were posted at public access sites fitting the criteria by April 15, 2004, weather permitting. The ground must be sufficiently dry and thawed for postholes to be dug and posts to be properly set.

Signs for Property Owners on or Adjacent to Affected Waters

Letters and public notices offer signs to adjacent landowners. Signs will be offered to Marion County and downstream landowners with property located on or adjacent to affected waterways. The downstream counties include *Johnson, Morgan, Monroe, Owen, Greene, Knox and Daviess Counties*. This offer will be via a public notice announcement in the Indianapolis Star, the largest newspaper in general circulation in Central Indiana, and included in a letter to appropriate entities prior to March 31st of each year.

¹⁸ Public Outreach Water Contact Use Assessment, McCormick Group, 2002.

Offers of signs are made to:

- Members of the affected public in Marion county and downstream counties via public notice
- Schools located on affected waters via letter
- Providers of recreational opportunities in Marion County via letter
- Downstream health departments via letter
- Downstream providers of recreational opportunities via letter
- Downstream governmental entities that may provide public access via letter.

In 2004, over 550 letters were mailed to the above listed groups.

Figure 6

Department of Public Works (DPW) Existing Outfall Signs

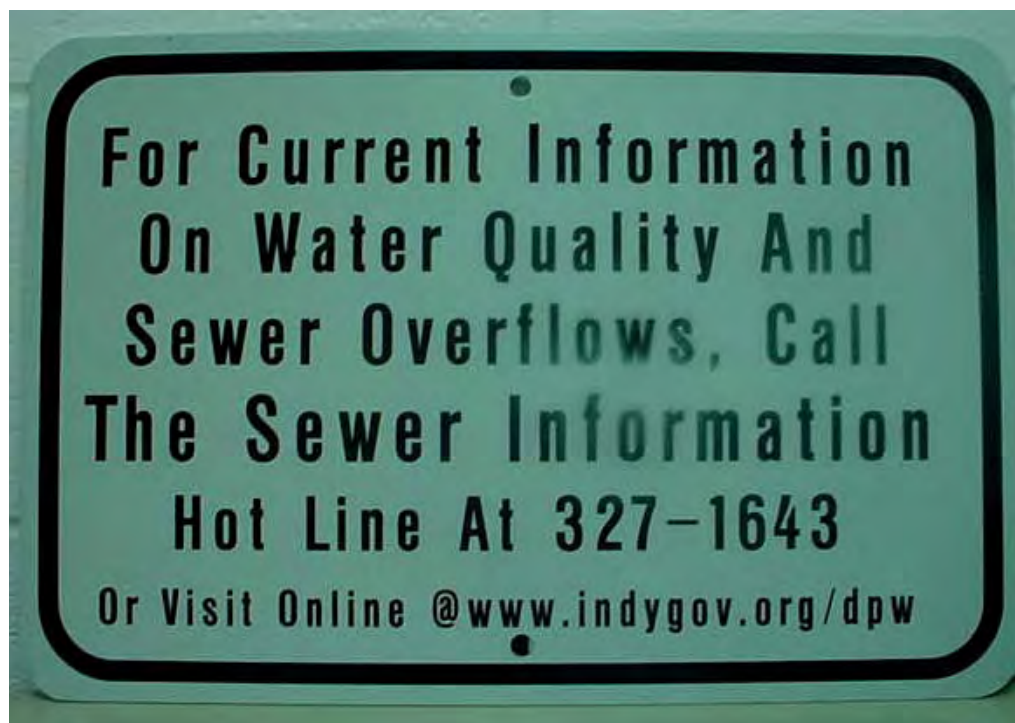


Figure 7

Marion County Health Department (MCHD) Existing Sign



Figure 8

DPW/MCHD Warning Sign

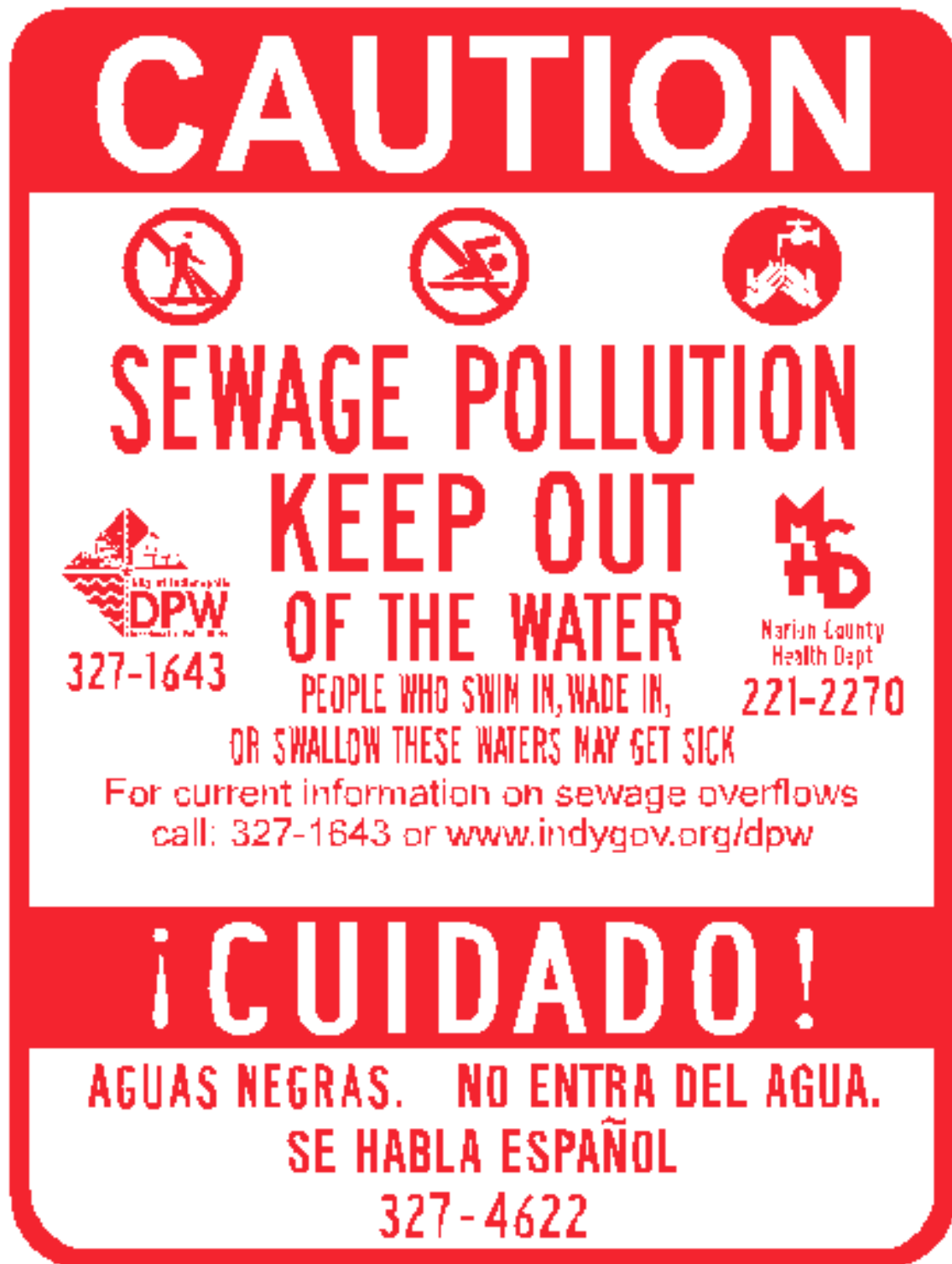


Table 6
Permitted CSOs

Outfall Number		Tributary	Permit Location	GIS Location
1	003	Little Buck Creek	Southport Raw Wastewater Overflow	
2	008	White River	Belmont Raw Wastewater Overflow	2700 Belmont Ave.
3	011	Big Eagle Creek	Minnesota St. & Pershing Ave.	1700 S. Pershing
4	012	White River	Raymond St. & West St.	2404 West St.
5	013	White River	Meridian St. & Alder St.	1750 S. West St.
	014 ¹⁹	White River	Kentucky Ave. & York St.	1555 Kentucky Ave.
6	015	Bean Creek	Sern Ave. & Manker Ave.	2615 S. Manker
7	016	Bean Creek	Shelby St. & Willow Dr.	2700 S. Shelby
8	017	Bean Creek	Boyd Ave. & Nelson Ave.	1500 E. Nelson
9	019	Pleasant Run	PLRPND ²⁰ & Meridian St.	20 E. Pleasant Run
10	020	Pleasant Run	PLRPND & Pennsylvania St.	60 E. Pleasant Run
11	021	Pleasant Run	PLRPND & Ransdell St.	2405 Madison Ave.
12	022	Pleasant Run	PLRPND ²¹ & Raymond St.	800 E. Raymond St.
13	023	Pleasant Run	PLRPND & Iowa St.	972 E. Pleasant Run
14	025	Pleasant Run	PLRPND & Shelby St.	1600 S. Shelby
15	027	Pleasant Run	PLRPND & Cottage Ave.	1502 S. Spruce
16	028	Pleasant Run	PLRPND & State St.	1300 S. State
17	029	Pleasant Run	Orange St. & Randolph St.	1902 E. Orange
18	030	Pleasant Run	PLRPND & Randolph St.	1901 E. Pleasant Run
19	031	Pleasant Run	PLRPND & Churchman Ave	1401 S. Churchman
20	032	Big Eagle Creek	Morris St. & Warman Ave.	1200 S. Warman
21	033	Little Eagle Creek	Vermont St. & Somerset Ave.	3725 Michigan St.
22	034	Pogues Run	Michigan St. & Dorman St.	1020 Michigan St.
23	34A	Pogues Run	Dorman St. b/t North & Michigan Sts.	
24	035	Pogues Run	Arsenal Ave. & 10 th St.	1520 E. 10 th St.
25	036	Pogues Run	Nowland Ave. & Tecumseh St.	1404 BPND ²²
26	037	White River	Washington St. & Geisendorff St.	801 Washington St.
27	038	White River	New York St. & Agnes St.	300 N. University Blvd.
28	039	White River	New York St. & Beauty Ave.	1100 Michigan St.
29	040	White River	New York St. & Koehne St.	1533 New York St.
30	041	White River	WRPWD ²³ & Michigan St.	500 N. WRPWD
31	042	White River	Saint Clair St. & Lynn Ave.	902 N. Lynn
32	043	White River	Harding St. & Waterway Blvd.	1541 W. New York St.
33	044	White River	Waterway Blvd. & Riverside Dr.	1400 N. East Riverside
34	045	White River	WRPWD & Belmont Ave.	1215 WRPWD
35	046	White River	Lafayette Rd. & 19 th St.	1900 N. Lafayette Rd.
36	049	Fall Creek	Stadium Dr. & Fall Creek	1050 Stadium Dr.
37	050	Fall Creek	Fall Creek Blvd. & Burdsal Pkwy.	842 W. Burdsal Pkwy.

¹⁹ Those items listed in RED have been eliminated.

²⁰ PLRPND = Pleasant Run Parkway North Drive

²¹ PLRPND = Pleasant Run Parkway South Drive

²² BPND = Brookside Parkway North Drive

²³ WRPWD = White River Parkway West Drive

Outfall Number		Tributary	Permit Location	GIS Location
38	50A	Fall Creek	Northwestern Ave. & 24 th St.	2400 N. MLK ²⁴
39	051	Fall Creek	Capitol Ave. & 22 nd St.	2200 N. Capitol
40	052	Fall Creek	Fall Creek Blvd. & Boulevard Pl.	261 W. 25 th St.
41	053	Fall Creek	FCPND ²⁵ & Illinois St.	100 W. FCPND
42	054	Fall Creek	FCPND & Meridian St.	2600 N. Meridian St.
43	055	Fall Creek	28 th St. & Talbot St.	2800 N. Talbot
44	057	Fall Creek	28 th St. & Washington Blvd.	2800 Washington Blvd.
45	058	Fall Creek	28 th St. & New Jersey St.	2800 N. New Jersey St.
46	059	Fall Creek	FCPND & Central Ave.	500 E. FCPND
47	060	Fall Creek	Sutherland Ave. & Central Ave.	2665 Central Ave.
48	061	Fall Creek	FCPND & Ruckle St.	522 Ruckle St.
49	062	Fall Creek	Guilford Ave. & 30 th St.	877 Guilford Ave.
50	063	Fall Creek	FCPND & 32 nd St.	3200 N. Fall Creek Blvd.
51	63A	Fall Creek	FCPND & 32 nd St.	3200 Fall Creek Blvd.
52	064	Fall Creek	Winthrop Ave. & 34 th St.	3400 N. Winthrop
53	065	Fall Creek	Sutherland Ave. & 34 th St.	3400 N. Sutherland Ave.
54	066	Fall Creek	Fall Creek Blvd. & Balsam Ave.	3500 N. Balsam
55	072	Pleasant Run	PLRPND & Saint Peter St.	2324 E. PLRPND
56	073	Pleasant Run	PLRPND & Keystone Ave.	1225 Keystone Ave.
57	074	Pleasant Run	PLRPND & Prospect St.	2950 E. Prospect
58	075	Pleasant Run	PLRPND & Southeastern Ave.	3230 Southeastern Ave.
59	076	Pleasant Run	PLRPND & English Ave.	3600 English Ave.
60	077	Pleasant Run	PLRPND & Sherman Dr.	302 S. Sherman
61	078	Pleasant Run	PLRPND & Brookville Rd.	4213 E. PLRPND
	079	Pleasant Run	PLRPND & Linwood Ave.	4421 Pleasant Run Pkwy.
62	080	Pleasant Run	PLRPND & Wallace Ave.	4772 E. PLRPND
63	081	Pleasant Run	PLRPND & Riley Ave.	5000 E. PLRPND
64	083	Pleasant Run	Hawthorne Ln. & Lowell Ave.	5302 E. Lowell
65	084	Pleasant Run	PLRPND & Michigan St.	5301 Saint Clair St.
66	085	Pleasant Run	PLRPND & Ritter Ave.	600 N. Ritter
67	086	Pleasant Run	PLRPND & Ritter Ave.	600 N. Ritter
68	087	Pleasant Run	PLRPND & Audubon Rd.	5736 PLRPND
69	088	Pleasant Run	PLRPND & Graham Ave.	5754 PLRPND
70	089	Pleasant Run	PLRPND & Arlington Ave.	700 N. Arlington Ave.
71	89A	Pleasant Run		6000 E. 9 th St.
72	090	Pleasant Run	Lowell Ave. & Sheridan Ave.	103 N. Sheridan
73	091	Pleasant Run	PLRPND & Kenmore Rd.	6307 E. PLRPND
74	092	Pleasant Run	PLRPND & Ridgeview Dr.	6419 E. PLRPND
75	095	Pogues Run	BPND & Coyner Ave.	1401 N. Jefferson
76	096	Pogues Run	BPND ²⁶ & Nowland Ave.	2200 E. BPND
77	097	Pogues Run	BPND & Keystone Ave.	2411 BPND
78	098	Pogues Run	Tacoma Ave. & Nowland Ave.	2500 E. Nowland
79	099	Pogues Run	BPND & Temple Ave.	2547 E. BPND

²⁴ MLK = Dr. Martin Luther King, Jr. Street

²⁵ FCPND = Fall Creek Parkway North Drive

²⁶ BPND = Brookside Parkway South Drive

	Outfall Number	Tributary	Permit Location	GIS Location
80	100	Pogues Run	BPSD & Rural St.	1350 N. Rural
81	101	Pogues Run	Sherman Dr. & BPND	1900 N. Kealing
82	102	Pogues Run	Forest Manor Ave. & 19 th St.	1940 Forest Manor Ave.
83	103	Meadow Brook	Sherman & Denwood Dr. S Lift Station	3940 Sherman Dr.
84	106	Pleasant Run	PLRPND & Orange St.	2102 E. Orange
85	107	Pleasant Run	PLRPND & Saint Paul St.	2224 E. PLRPND
86	108	Pleasant Run	PLRPND & Saint Paul St.	1327 S. Saint Paul
87	109	Pleasant Run	PLRPND & Churchman St.	1225 S. Churchman
88	115	Pogues Run	Henry St. & Kentucky Ave.	801 Kentucky Ave.
89	116	White River	Meikel St. & Ray St.	940 S. Meikel
90	117	White River	Sern Ave. & White River	700 Sern Ave.
91	118	White River	WRPED ²⁷ & West St.	1800 West St.
92	119	Pleasant Run	PLRPND & Beecher St.	937 E. Beecher
93	120	Pleasant Run	PLRPND & Sern Ave.	2701 Bluff Rd.
94	125	Pogues Run	Meridian St. & South St.	300 E. South
95	127	Pleasant Run	1325 S. State St.	1325 S. State
96	128	Pogues Run	Senate Ave. & Merrill St.	230 Merrill St.
97	129	Pogues Run	Meridian St. & Merrill St.	546 Meridian St.
98	130	Pleasant Run	Manual High School	2405 Madison Ave.
99	131	Fall Creek	Fall Creek Blvd. & Capitol Ave.	200 W. FCPND
100	132	Fall Creek	FCPND & Pennsylvania St.	115 FCPND ²⁸
101	133	Pogues Run	Market St. & Pine St.	720 Market St.
102	135	Fall Creek	Orchard Ave. & 39 th St.	1711 39 th St.
103	136	Pogues Run	New York St. & Dorman St.	925 Vermont St.
104	137	Pogues Run	Pine St. & Ohio St.	901 Ohio St.
105	138	Pogues Run	College Ave. & Washington St.	675 Washington St.
106	A38	Pogues Run	Davidson St. & Washington St.	644 College Ave.
107	141	Fall Creek	Winthrop Ave. & 38 th St.	700 E. 38 th St.
108	142	Fall Creek	College Ave. & 38 th St.	3374 FCPND
109	143	Pogues Run	Forest Manor Ave. & 21 st St.	1940 Forest Manor Ave.
110	145	Big Eagle Creek	Raymond St. & Kentucky Ave.	2075 Old Raymond St.
111	147	White River	WRPWD & Vermont St.	402 N. WRPWD
112	148	Pleasant Run	PLRPND & Madison Ave.	2400 S. Madison
113	149	Pleasant Run	PLRPND & Garfield Dr.	749 E. PLRPND
114	150	Pleasant Run	PLRPND & Raymond St.	2450 Shelby St.
115	151	Pleasant Run	PLRPND & Beecher St.	930 E. Beecher
116	152	Pogues Run	Pine St. & Ohio St.	901 Ohio St.
117	153	Pogues Run	Illinois Ave. & Merrill St.	600 S. Illinois
118	154	Pleasant Run	PLRPND & Michigan St.	5250 PLRPND
119	155	White River	Pennsylvania St. & 54 th St.	5640 Illinois St.
	156	White River	Capitol Ave. & Westfield Blvd.	5600 N. Kenwood
120	205	White River	Boulevard Pl. & Westfield Blvd.	5625 Sunset Ln.
121	210	Fall Creek	Indiana Ave. & 10 th St.	
122	213	Fall Creek	2900 N. Hillside	2888 Sutherland Ave.

²⁷ WRPED = White River Parkway East Drive

²⁸ FCPND = Fall Creek Parkway South Drive

Outfall Number		Tributary	Permit Location	GIS Location
123	216	Fall Creek	Crittenden Ave. & 42 nd St.	4141 FCPND
124	217	State Ditch	Gadsden St. & Lyons Ave.	2701 Lyons Ave.
125	218	State Ditch	Gadsden St. & Fleming St.	2622 Fleming St.
126	223	Big Eagle Creek	Victoria St. & Warman Ave.	502 Harris Ave.
127	224	Pleasant Run	PLRPND & Washington St.	4800 Washington St.
	226	Pleasant Run	PLRPND & Colorado Ave.	4206 Colorado Ave.
128	227	Pleasant Run	5700 Emich	5650 PLRPND
129	228	Pleasant Run	Michigan St. & Graham Ave.	6776 Michigan St.
130	229	Pleasant Run	PLRPND & Arlington Ave.	414 Arlington Ave.
131	235	Lick Creek	Shelby St. & Markwood Ave.	4403 McConnell Way
132	275	White River	4945 S. Foltz	4651 Foltz St.

Table 7

Marion County Health Department (MCHD) Sign Locations

Tributary	Location	GIS Guestimate Location
Cumberland Creek	812 N. Spy Run Rd.	812 N. Spy Run Rd .
Eagle Creel	Holt Rd./Eagle Creek	50 N. Holt Rd.
Eagle Creek	McCarty St./Eagle Creek	815 Tip St.
Eagle Creek	Morris St./Eagle Creek	815 Tip St.
Fall Creek	4400 Fall Creek Pkwy.	4400 Fall Creek Pkwy.
Fall Creek	4300 Abby Creek Pkwy.	4300 Abby Creek Pkwy.
Fall Creek	3300 Fall Creek Pkwy.	3300 Fall Creek Pkwy.
Fall Creek	Near Park @ 30 th & Fall Creek	2950 Fall Creek Pkwy.
Fall Creek	Dam @ MLK & Fall Creek	2201 Dr. MLK Jr. St.
Fall Creek	West of MLK across from Watkins Park	2360 Dr. MLK Jr. St.
Fall Creek	900 W. Burdsal Pkwy.	900 W. Burdsal Pkwy.
Fall Creek	10 th St. & Pedestrian Bridge	1600 W. 10 th St.
Fall Creek	10 th St. & Pedestrian Bridge	1600 W. 10 th St.
Fall Creek	Fall Creek Greenway between Keystone Ave. & Binford Blvd.	
Fall Creek	Fall Creek Greenway Binford Blvd. Parking lot	
Little Eagle Creek	Vermont St./Little Eagle Creek	3800 W. Vermont St.
Pleasant Run	5309 Pleasant Run Pkwy. S Dr.	5309 Pleasant Run Pkwy. S Dr.
Pleasant Run	By electric box, North side of creek	5301 E. Saint Clair
Pleasant Run	Ellenberger & Michigan St./near intersection	5301 E. Saint Clair
Pleasant Run	West of Pedestrian Bridge north of Tennis Courts	5301 E. Saint Clair
Pleasant Run	South & East of Pedestrian Bridge/South side of Creek	5301 E. Saint Clair
Pleasant Run	Across from 5457 Pleasant Run Pkwy.	5457 Pleasant Run Pkwy.
Pleasant Run	Near Howe High School	300 S. Wallace Ave.
Pleasant Run	Just north of Brookville Rd.	4417 Pleasant Run Pkwy. S Dr.
Pleasant Run	Pedestrian Bridge/Christian Park	4200 English Ave.
Pleasant Run	Barth Ave./bridge	1801 Shelby Ave
Pleasant Run	LeGrande Ave./pedestrian bridge	743 E. Pleasant Run Pkwy. S Dr.
Pogues Run	Brookside Park	3500 Brookside Pkwy.
Pogues Run	Brookside Park	3600 Brookside Pkwy.
Pogues Run	10 th St. by School 101	1500 E. 10 th St.

Tributary	Location	GIS Guestimate Location
State Ditch	Gadsden St. & Lyons	2655 S. Lyons
State Ditch	Lyon Ave.	3145 S. Lyons
White River	Lake Indy	2650 White River Pkwy. E Dr.
White River	1400 White River Pkwy.	1400 White River Pkwy. W Dr.
White River	Behind IWC	1200 N. Waterway Blvd.
White River		1500 W. New York St.
White River	East of River & Raymond St.	900 W. Raymond St.
White River	Harding St. on North side of River	2700 S. Harding St.
White River	Harding St. on South side of River	2800 S. Harding St.

Table 8

Marion County Schools²⁹ Evaluated for Signs

School	Address	Principal	Zip	Township	Tributary
Baptist Academy	2565 Villa Ave.	Barbara Padgett	46203-4499	Center	Lower White River
IPS #020 Otis E. Brown	1849 Pleasant Run Pkwy. S Dr.	Roberta Lynn Henderson	46203-2006	Center	Lower White River
IPS #042 Elder W. Diggs	1002 W. 25 th St.	Minetta Richardson	46208-5330	Center	Upper White River
IPS #101 HL Harshman	1501 E. 10 th St.	Linda Casey	46201-1909	Center	Lower White River
IPS Horizon Alternative School	1401 E. 10 th St.	Jethro Knazze	46202-1462	Center	Lower White River
IPS #047 Thomas A Edison	777 S. White River Pkwy. W Dr.	Patricia Bolanos	46221	Center	Lower White River
IPS Arsenal Technical	1500 E. Michigan St.	Peggy Clark	46201-3098	Center	Lower White River
IPS Emmerich Manual	2405 Madison Ave.	Kenneth Poole	46225-2106	Center	Lower White River
IUPUI	815 W. Michigan St.		46202	Center	Upper White River
Christian Theological Seminary	1000 W. 42 nd St.		46208	Washington	Upper White River
Butler University	4600 Sunset Ave.		46208	Washington	Upper White River
LPP & Arlington Elementary #2	6040 E. Pleasant Run Pkwy. S Dr.	Teresa Bachus-Bray	46219-6039	Warren	Lower White River
IPS Howe	4900 Julian Ave.	John Takacs	46201	Center	Lower White River
Capitol City SDA School	2143 Boulevard Pl.		46202	Center	Lower White River
C 1 Prof. Training Center	3603 E. Raymond St.		46203	Center	Lower White River
Indiana Higher Education	714 N. Senate Ave.		46202	Center	Fall Creek
Ivy Tech State College	1 W. 26 th St.		46208	Center	Fall Creek
School of SPEA	334 N. Senate Ave.		46204	Center	Lower White River
Montessori Centres Inc	563 W. Westfield Blvd.		46208	Washington	Lower White River
Irvington Preschool	345 N. Kitley Ave.	Pamela Maki	46219	Warren	Lower White River
Our Savior Lutheran Academy	261 W. 25 th St.	Felix Renteria	46208	Center	Lower White River

²⁹ Areas were determined based on county GIS information, aerial photography and the McCormick study.

Table 9**Park Areas³⁰ Evaluated for Signs**

Tributary	Park	Location
White River	Friedmann Park	5670 Stonehill Dr.
White River	Riverside Park	2420 E. Riverside Dr.
White River	Belmont Park	1300 N. Belmont Ave.
White River	White River State Park	801 W. Washington St.
White River	School 47/Old Riley Park	777 W. White River Pkwy. S Dr.
White River	Southwestway Park	8400 S. Mann Rd.
Fall Creek	Fall Creek & 30 th St. Park	30 th St. & Fall Creek
Fall Creek	24 th St. Park	24 th St. & Fall Creek Pkwy.
Fall Creek	Watkins Park	2360 Dr. MLK Jr. St.
Fall Creek	Fall Creek & 16 th St. Park	16 th St. & Fall Creek Pkwy.
Pogues Run	Forest Manor Park	200 N. Forest Manor Ave.
Pogues Run	Brookside Park	3500 Brookside Pkwy.
Pleasant Run	Ellenberger Park	5301 E. Saint Clair St.
Pleasant Run	Christian Park	4200 English Ave.
Pleasant Run	Garfield Park	2460 S. Shelby St.
Lick Creek	Southside Park	1941 E. Hanna Ave.
Lick Creek	Bluff Park	555 W. Hanna Ave.
Little Eagle Creek	Olin Park	702 N. Olin Ave.

³⁰ Areas were determined based on county GIS information, aerial photography and the McCormick study.

Table 10

Boat Ramps, Docks and Canoe Launch Areas³¹ Evaluated for Signs

Tributary	Facility	Location
White River	Canoe Launch	Kessler Blvd./Friedmann Park
White River	Canoe Launch	Rocky Ripple
White River	Canoe Launch	Rocky Ripple
White River	Canoe Launch	30 th St. Bridge
White River	Canoe Launch	10 th St. IUPUI Complex
White River	Canoe Launch	South of Indianapolis Zoo
White River	Canoe Launch	East shore, across from Indianapolis Belmont Disposal Plant
White River	Canoe Launch	White River & Lick Creek
White River	Canoe Launch	Ralston Rd. & White River/Southwestway Park
White River	Boat Dock	Rocky Ripple, across river from Highland Golf Course
White River	Boat Dock	Rocky Ripple, across river from Highland Golf Course
White River	Boat Ramp	Riverside Park (Indy Lake)
White River	Boat Ramp	Near Raymond St. & White River E Dr.

³¹ Areas were determined based on county GIS information, aerial photography and the McCormick study.

Table 11
Bridge Locations³² Evaluated for Signs

Tributary	Bridge Location
White River	Kessler Blvd.
White River	Michigan Rd.
White River	38 th St.
White River	30 th St.
White River	16 th St.
White River	10 th St.
White River	Michigan St.
White River	New York St.
White River	Washington St. Pedestrian Bridge
White River	Washington St.
White River	Oliver Ave.
White River	Kentucky Ave.
White River	Interstate 70
White River	Morris St.
White River	Raymond St.
White River	Harding St.
White River	Interstate 465
White River	Southport Rd.
Fall Creek	Keystone Ave.
Fall Creek	39 th St.
Fall Creek	38 th St.
Fall Creek	30 th St.
Fall Creek	College Ave.
Fall Creek	Central Ave.
Fall Creek	Delaware St.
Fall Creek	Meridian St.
Fall Creek	Illinois St.
Fall Creek	Capitol Ave.
Fall Creek	Senate Ave.
Fall Creek	Interstate 65
Fall Creek	Interstate 65 Ramp
Fall Creek	Dr. MLK Jr. St.
Fall Creek	21 st St.
Fall Creek	16 th St.
Fall Creek	Stadium Dr.
Little Eagle Creek	Michigan St.
Little Eagle Creek	Cossell Rd.
Little Eagle Creek	Washington St.
Big Eagle Creek	Interstate 70
Big Eagle Creek	Raymond St.
State Ditch	Bradbury Ave.
State Ditch	Ironton St.

³² Areas were determined based on county GIS information, aerial photography and the McCormick study.

Tributary	Bridge Location
State Ditch	Southern Ave.
State Ditch	Gadsden St.
State Ditch	Farnsworth St.
State Ditch	Berwyn St.
State Ditch	Troy Ave.
State Ditch	Perry St.
State Ditch	Kentucky Ave.
State Ditch	Mooresville Rd.
State Ditch	Superior Rd.
State Ditch	Interstate 465
Pogues Run	Brookside Park
Pogues Run	Brookside Park
Pogues Run	Brookside Park
Pogues Run	Rural St.
Pogues Run	Nowland Ave.
Pogues Run	Nowland Ave.
Pogues Run	Samoa St.
Pogues Run	Commercial Ave.
Pogues Run	Newman St.
Pogues Run	12 th St.
Pogues Run	10 th St.
Pogues Run	Oriental St.
Pogues Run	North St.
Pleasant Run	Emerson Ave.
Pleasant Run	Washington St.
Pleasant Run	Howe High School
Pleasant Run	Colorado Ave.
Pleasant Run	Brookville Rd.
Pleasant Run	Christian Park
Pleasant Run	Sherman Dr.
Pleasant Run	English Ave.
Pleasant Run	Southeastern Ave.
Pleasant Run	Prospect Ave.
Pleasant Run	Keystone Ave.
Pleasant Run	Churchman Ave.
Pleasant Run	Villa Ave.
Pleasant Run	State Ave.
Pleasant Run	Spruce St.
Pleasant Run	Interstate 65
Pleasant Run	Shelby St.
Pleasant Run	Beecher St.
Pleasant Run	Raymond St.
Pleasant Run	Garfield Park Center Dr.
Pleasant Run	Pagoda Dr.
Pleasant Run	Madison Ave.
Pleasant Run	Meridian St.
Pleasant Run	Bluff Rd.
Bean Creek	Interstate 65
Bean Creek	Nelson Ave.

Tributary	Bridge Location
Bean Creek	Shelby Ave.
Bean Creek	Southern Ave.
Bean Creek	Conservatory Dr.
Bean Creek	Garfield Park Center Dr.
Lick Creek	Madison Ave.
Lick Creek	Interstate 465
Lick Creek	Interstate 465
Lick Creek	East St.
Lick Creek	Interstate 465
Lick Creek	Interstate 465
Lick Creek	Meridian St.
Lick Creek	Bluff Rd.
Lick Creek	Harding St.

Table 12**CSO Public Notification Responsible Parties**

Name	Division	Department/Company	Contact Information	Area of Responsibility
Amanda Shipman	Policy and Planning (Strategic Planning)	Department of Public Works	200 E. Washington St., Suite 2460 Indianapolis, IN 46204 (317) 327-2339 ashipman@indygov.org	CSO Public Notification Program Operations Manager
Mario Mazza	Operations (Water Management Services)	Department of Public Works	1735 S. West St. Indianapolis, IN 46225 (317) 327-4083 mmazza@indygov.org	DMR Reports; placement and maintenance of CSO public notification signs at outfalls
Paul Whitmore	Policy and Planning (Public Information Officer)	Department of Public Works	200 E. Washington St., Suite 2460 Indianapolis, IN 46204 (317) 327-4669 pwhitmor@indygov.org	Backup Program Operations Manager; mailing program manager; general communications and outreach
Victoria Cluck	Policy and Planning (Strategic Planning)	Department of Public Works	200 E. Washington St., Suite 2460 Indianapolis, IN 46204 (317) 327-3744 vcluck@indygov.org	Administration and Backup Program Operations Manager
Pam Thevenow	Water Quality and Hazardous Materials Management	Marion County Health Department	3838 N. Rural St. Indianapolis, IN 46205 (317) 221-2266 ptheveno@hhcorp.org	Placement and maintenance of CSO public notification signs as noted in Table 7
Lenny Addair	Operations (Maintenance Services)	Department of Public Works	1735 S. West St. Indianapolis, IN 46225 (317) 327-2935 laddair@indygov.org	Placement of new signs
Michael Krosschell	Principle Planner	Department of Parks and Recreation	200 E. Washington St., Suite 1821 Indianapolis, IN 46204 (317) 327-5725	General coordination and location of signs for the Parks Dept.

			mkrossch@indygov.org	
Dave Lister	Programming and Promotions Coordinator	Cable Communications Agency – WCTY Channel 16	200 E. Washington St. Indianapolis, IN 46204 (317) 327-2017 dlister@indygov.org	Issue television warnings as needed.

TITLE 327 WATER POLLUTION CONTROL BOARD

LSA Document #00-136(F)

DIGEST

Adds a new rule concerning public notification by National Pollutant Discharge Elimination System (NPDES) permit holders of the potential health impact of combined sewer overflows (CSOs) and amends 327 IAC 5-2-9. Effective 30 days after filing with the secretary of state.

HISTORY

First Notice of Comment Period: #00-136(WPCB) July 1, 2000, Indiana Register (23 IR 2613).

Second Notice of Comment Period and Notice of First Hearing: February 1, 2002, Indiana Register (25 IR 1736).

Date of First Hearing: April 10, 2002.

Third Notice of Comment Period and Notice of Second Hearing: November 1, 2002, Indiana Register (26 IR 422).

Date of Second Hearing and Final Adoption: January 8, 2003.

327 IAC 5-2.1

SECTION 2. 327 IAC 5-2.1 IS ADDED TO READ AS FOLLOWS:

Rule 2.1. Combined Sewer Overflow Public Notification

327 IAC 5-2.1-1 Purpose

Authority: IC 13-14-1-5; IC 13-14-8; IC 13-14-9; IC 13-18-4-1

Affected: IC 13-18-3

Sec. 1. The purpose of this rule concerning community notification of potential health impacts resulting from a combined sewer overflow discharge is to promote and accomplish the following:

(1) Educate the public, in general, and those persons who, specifically, may come into contact with water that may be affected by a combined sewer overflow discharge as to the health implications possible from combined sewer overflow discharge tainted water.

(2) Alert members of the public who may be immediately affected by a combined sewer overflow discharge or the potential for a combined sewer overflow discharge to occur.

(3) Enable members of the public to protect themselves from possible exposure to waterborne pathogens resulting from contact with or ingestion of water from a waterway that may be affected by a combined sewer overflow discharge.

(4) Complement the combined sewer overflow discharge requirements contained in a National Pollutant Discharge Elimination System (NPDES) permit but not obviate or supersede any more stringent requirements contained in an NPDES permit.

(Water Pollution Control Board; 327 IAC 5-2.1-1)

327 IAC 5-2.1-2 Applicability

Authority: IC 13-14-1-5; IC 13-14-8; IC 13-14-9; IC 13-18-4-1
Affected: IC 13-18-3

Sec. 2. Any person required to possess a National Pollutant Discharge Elimination System (NPDES) permit and having one (1) or more combined sewer overflow outfalls into waters of the state must comply with this rule. (*Water Pollution Control Board; 327 IAC 5-2.1-2*)

327 IAC 5-2.1-3 Definitions

Authority: IC 13-14-1-5; IC 13-14-8; IC 13-14-9; IC 13-18-4-1
Affected: IC 13-11-2-158; IC 13-11-2-265; IC 13-18-3

Sec. 3. The following definitions apply throughout this rule:

(1) "Affected public" means those persons who may be exposed to waterborne pathogens through direct contact with or ingestion of water affected by a combined sewer overflow discharge and is limited to:

- (A) residents on or adjacent to affected waters;
- (B) public and private schools on or adjacent to affected waters;
- (C) owners or operators of facilities that provide access to or recreational opportunities in or on affected waters; and
- (D) owners or operators of public drinking water systems with surface intakes in or on affected waters.

(2) "Affected waters" means those waters where the E.coli criteria may be exceeded due to a combined sewer overflow discharge.

(3) "Combined sewage" means a combination of wastewater, including domestic, commercial, or industrial wastewater and storm water transported in a combined sewer.

(4) "Combined sewer overflow community" or "CSO community" means a recipient of a National Pollutant Discharge Elimination System (NPDES) permit that includes one (1) or more combined sewer overflow outfalls.

(5) "Combined sewer overflow discharge" or "CSO discharge" means the discharge of combined sewage from an overflow point listed in an NPDES permit.

(6) "Combined sewer overflow outfall" or "CSO outfall" means a structure that:

- (A) conveys combined sewage into a receiving waterbody; and
- (B) is listed in an NPDES permit.

(7) "Combined sewer system" means a system that:

- (A) is designed, constructed, and used to receive and transport combined sewage to a publicly owned wastewater treatment plant; and
- (B) may contain one (1) or more combined sewer overflow outfalls that discharge sewage when the hydraulic capacity of the wastewater treatment plant, combined sewer system, or part of the system is exceeded as a result of a wet weather event.

(8) "Commissioner" means the commissioner of the department of environmental management.

(9) "Department" means the department of environmental management except as specifically referenced in this rule.

(10) "Person" has the meaning set forth at IC 13-11-2-158.

(11) "Waters of the state" has the meaning set forth for "waters" at IC 13-11-2-265.

(*Water Pollution Control Board; 327 IAC 5-2.1-3*)

327 IAC 5-2.1-4 CSO notification procedure

Authority: IC 13-14-1-5; IC 13-14-8; IC 13-14-9; IC 13-18-4-1

Affected: IC 13-18-3

Sec. 4. (a) A CSO community shall:

- (1) develop a CSO notification procedure that meets the requirements of this rule; and
- (2) incorporate the CSO notification procedure into its CSO operational plan.

(b) A CSO notification procedure must include the following information at a minimum:

- (1) Determination of affected waters for the purpose of providing community notification according to section 5 of this rule.
- (2) Locations of:
 - (A) the CSO outfalls;
 - (B) public access points including boat launches and bridges located on affected waters; and
 - (C) parks, school yards, parkways, and greenways on or adjacent to affected waters.
- (3) Locations of drinking water suppliers having surface water intakes located within ten (10) river miles downstream of each CSO outfall within the CSO community's jurisdiction.
- (4) Method, according to section 6 of this rule, that shall be used to provide notification to the affected public within the area of each affected water.
- (5) Assignment of responsibilities within a CSO community for implementing the CSO notification procedure.

(c) A CSO notification procedure must be:

- (1) submitted to the commissioner for review six (6) months after the effective date of this rule;
- (2) included in the community's CSO operational plan;
- (3) in the initial stages of implementation by the CSO community upon submission according to subdivision (1);
- (4) fully implemented no later than ninety (90) days after the date of submission according to subdivision (1); and
- (5) modified in order to ensure that the procedure is consistent with this rule if either of the following occurs:
 - (A) The commissioner requests such modification within six (6) months of the date of submission of the notification procedure.
 - (B) A member of the affected public requests that the department reevaluate the notification procedure.

(Water Pollution Control Board; 327 IAC 5-2.1-4)

327 IAC 5-2.1-5 Notification

Authority: IC 13-14-1-5; IC 13-14-8; IC 13-14-9; IC 13-18-4-1

Affected: IC 13-18-3

Sec. 5. (a) A CSO community shall provide notification to:

- (1) affected public;

- (2) other persons within the CSO community who request to be notified in response to the public notice required by section 6(a)(1) of this rule; and
- (3) local health departments and drinking water suppliers having surface water intakes located within ten (10) river miles downstream of each CSO outfall experiencing or about to experience a CSO discharge.

(b) The notification must be appropriately worded to explain the nature of the potential health effects of a CSO discharge and steps that affected persons can take to avoid exposure.

(c) Unless specifically required in this rule, a CSO community is not responsible for confirming that the intended recipients of the notification required by subsection (a) received the notification.

(d) Notification must be provided whenever information from a reliable source indicates that:

- (1) a discharge or discharges from one (1) or more combined sewer overflow outfalls is occurring; or
- (2) a discharge or discharges from one (1) or more combined sewer overflow outfalls is imminent based on predicted or actual precipitation or a related event.

(e) If a CSO discharge occurred and notification was not provided according to subsection (d), the CSO community shall report this fact on the monthly report required according to section 7(a) of this rule. (*Water Pollution Control Board; 327 IAC 5-2.1-5*)

327 IAC 5-2.1-6 Community notification methods

Authority: IC 13-14-1-5; IC 13-14-8; IC 13-14-9; IC 13-18-4-1

Affected: IC 13-18-3

Sec. 6. (a) A CSO community shall do the following unless alternative procedures are identified by the community that are equivalently effective:

- (1) Provide public notice in a newspaper of general circulation in March of each year to allow the following to request receipt of CSO notification:
 - (A) Media sources, such as newspapers, television, or radio.
 - (B) Affected public.
 - (C) Other interested persons in the CSO community.
- (2) Provide notification to those identified under subdivision (1) who request receipt of CSO notification under subdivision (1):
 - (A) when a CSO discharge is occurring or is imminent based on predicted or actual precipitation or a related event; and
 - (B) in a manner that is mutually agreeable to the recipient and the CSO community.

If the recipient and CSO community do not reach agreement on an acceptable manner of notification, then the CSO community shall provide notice by a reasonable, effective means.

(b) In addition to the requirements of subsection (a), a CSO community shall post a prominent sign within the CSO community's jurisdiction:

- (1) at access points to an affected water, including boat ramps, bridges, parks, and school yards;

(2) along parkways and greenways on or adjacent to affected waters at locations most likely to provide notification to persons who may come into direct contact with the water based on information available to the CSO community; and
(3) with the language printed in English or any other language common in the locale (including the language necessary to fill in the blanks) that states or is equal in meaning to the following: "Caution—Sewage or Wastewater pollution. Sewage or Wastewater may be in this water during and for several days after periods of rainfall or snow melt. People who swim in, wade in, or ingest this water may get sick. For more information, please call [insert local sewer authority, telephone number, and, if available, a Web site address]."

(c) Cautionary combined sewer overflow signs posted prior to the effective date of this rule advising that combined sewer overflows may occur at that point do not need to be replaced specifically to comply with the wording of subsection (b)(3). If, however, a cautionary combined sewer overflow sign existing prior to the effective date of this rule does need replacement due to reasons such as weathering or other reasons for replacement then the replacement sign must comply with the language suggested in subsection (b)(3).

(d) If an access point to an affected water is located on private property or property outside a CSO community's jurisdiction, then a CSO community shall:

- (1) annually offer to provide the sign required under subsection (b) for the owner or operator of the private or nonjurisdictional property; and
- (2) not be required to provide the sign required under subsection (b) provided the private or nonjurisdictional property owner or operator has refused the community's offer made according to subdivision (1). (*Water Pollution Control Board; 327 IAC 5-2.1-6*)

327 IAC 5-2.1-7 Record keeping and reporting

Authority: IC 13-14-1-5; IC 13-14-8; IC 13-14-9; IC 13-18-4-1

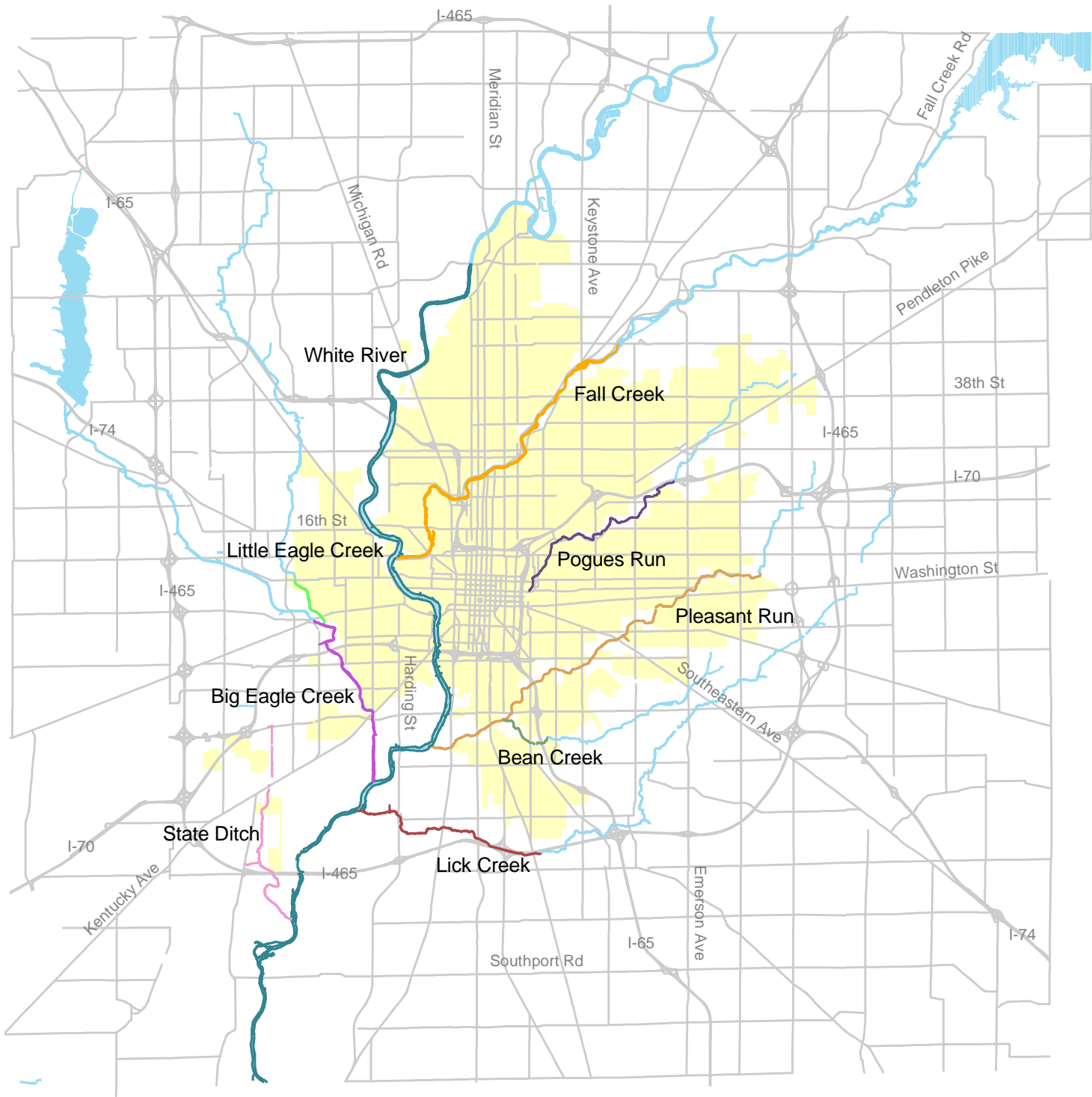
Affected: IC 13-18-3

Sec. 7. (a) A CSO community shall document its public notification efforts on its monthly CSO discharge monitoring report (DMR).

(b) A CSO community shall maintain a record of reports submitted according to subsection (a) that is:

- (1) kept at the wastewater treatment plant; and
 - (2) available to the commissioner's representatives during the department's normal working hours.
- (*Water Pollution Control Board; 327 IAC 5-2.1-7*)

Figure 1
Streams Affected by CSOs



Legend

- Streams outside CSO area
- Major Streets
- CSO Basin

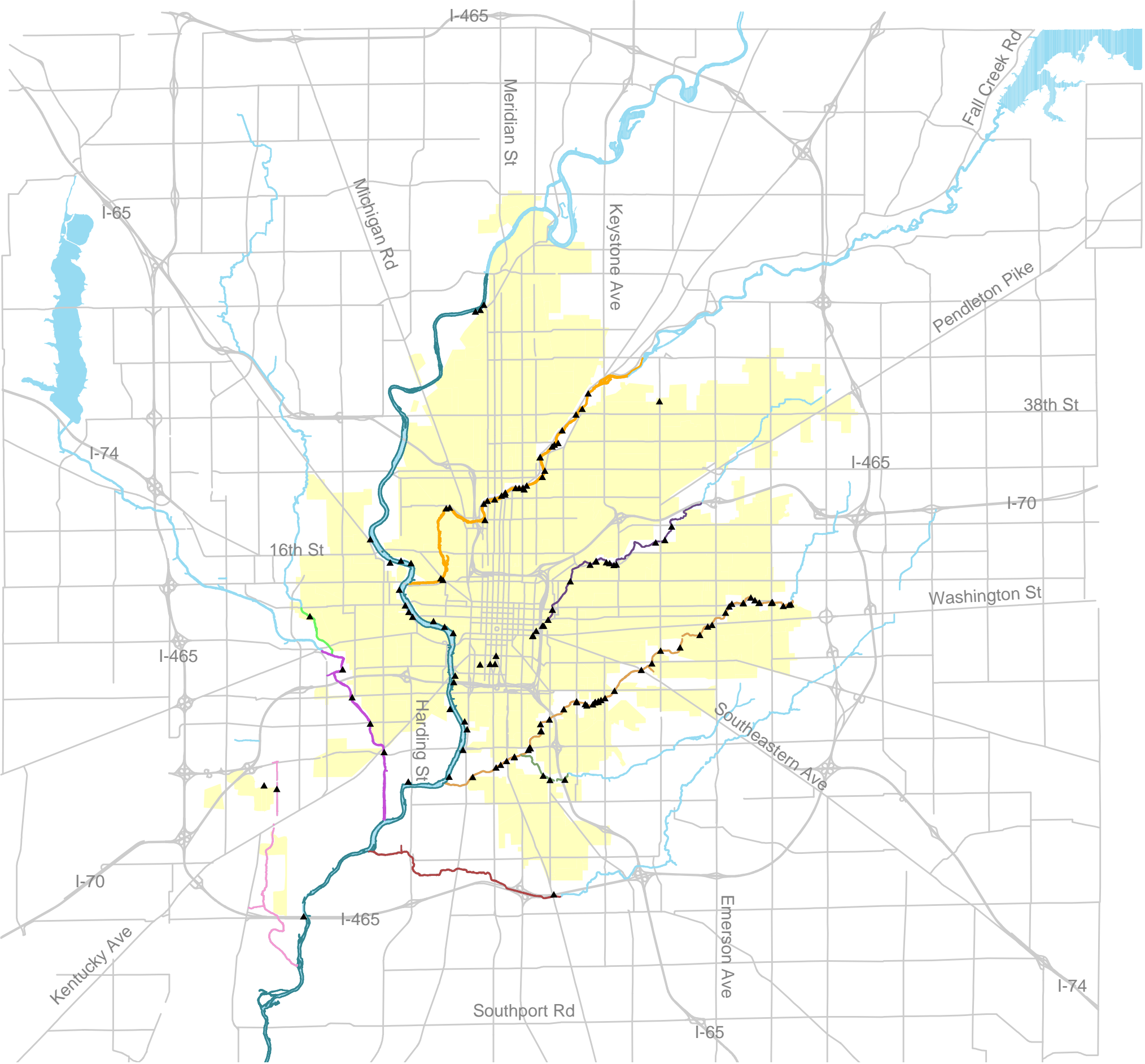
Streams within CSO area

- BEAN CREEK
- BIG EAGLE CREEK
- FALL CREEK

- LICK CREEK
- LITTLE EAGLE CREEK
- PLEASANT RUN
- POGUES RUN
- STATE DITCH
- WHITE RIVER



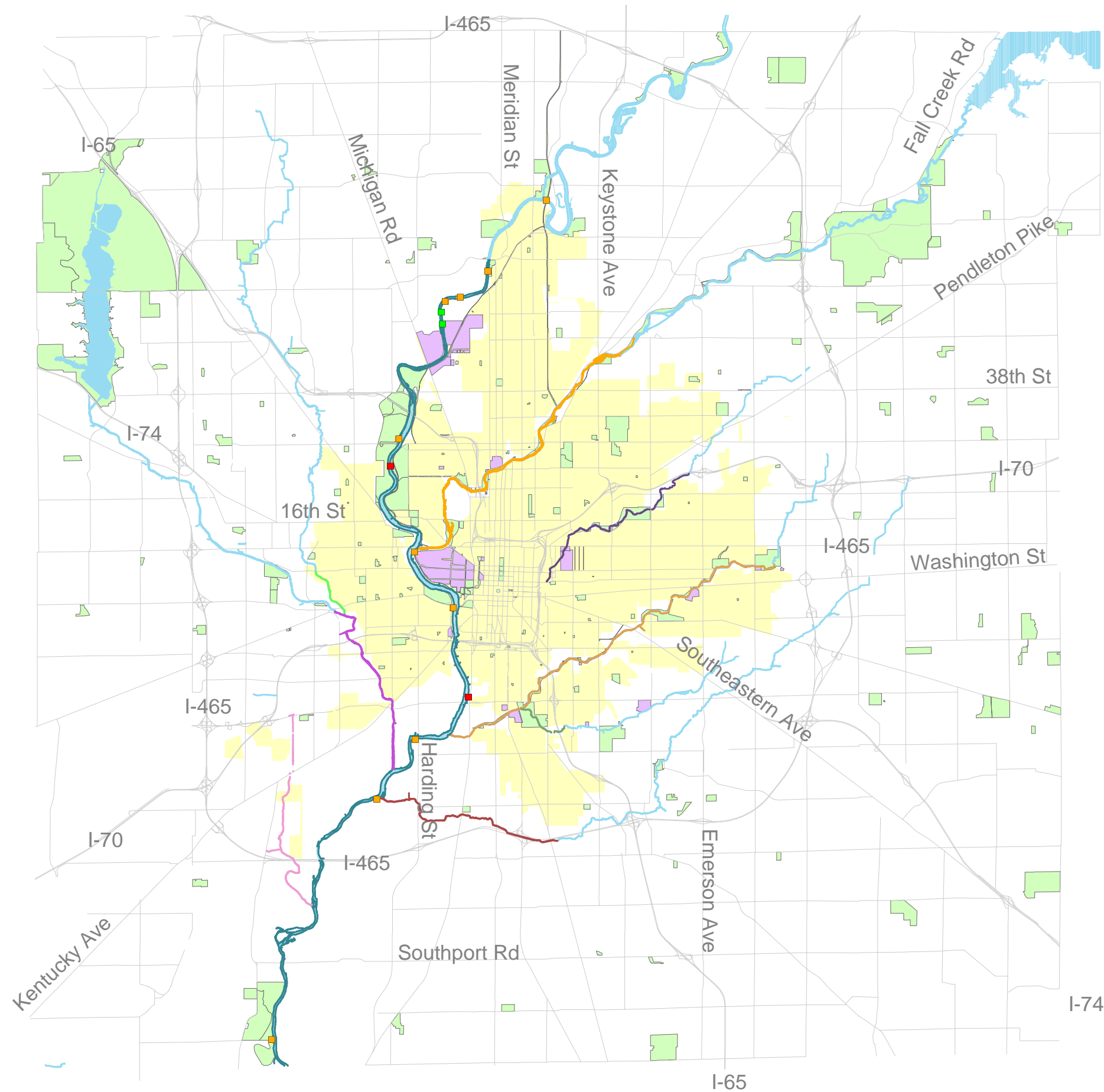
Figure 2
CSO Outfall Locations



Legend

- ▲ CSO Outfall
- Major Streets
- Streams outside CSO area
- Streams within CSOarea**
 - BEAN CREEK
 - BIG EAGLE CREEK
 - FALL CREEK
 - LICK CREEK
 - LITTLE EAGLE CREEK
 - PLEASANT RUN
 - POGUES RUN
 - STATE DITCH
 - WHITE RIVER
- CSO Basin

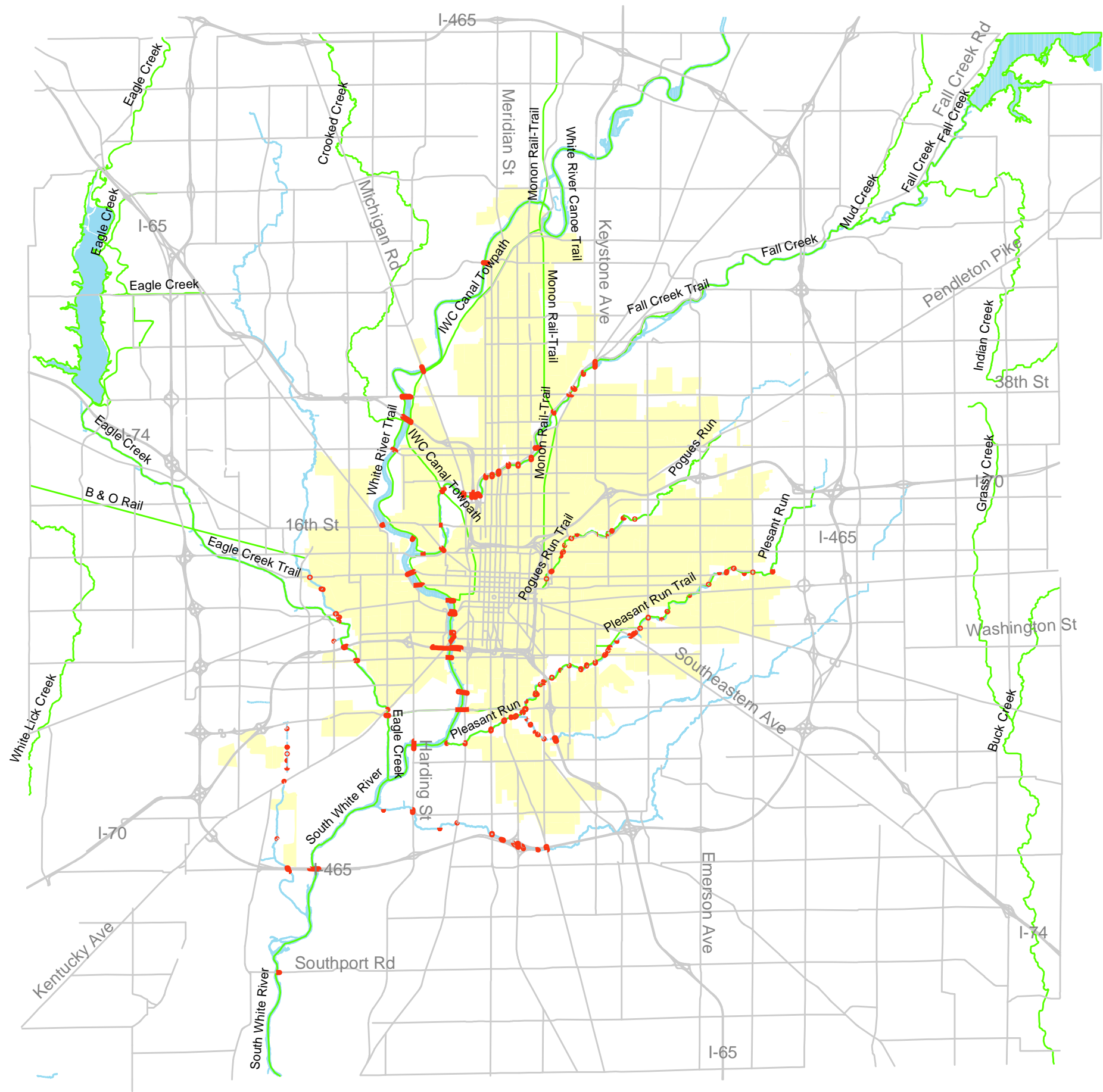
Figure 3
Public Access Areas
and Schools



Legend

- Boat Ramp
- Boat Dock
- Canoe Launch
- Major Streets
- Streams outside CSO area
- Streams within CSO area**
 - BEAN CREEK
 - BIG EAGLE CREEK
 - FALL CREEK
 - LICK CREEK
 - LITTLE EAGLE CREEK
 - PLEASANT RUN
 - POGUES RUN
 - STATE DITCH
 - WHITE RIVER
- Parks
- School Area
- CSO Basin

Figure 4
Bridges and
Greenway Areas



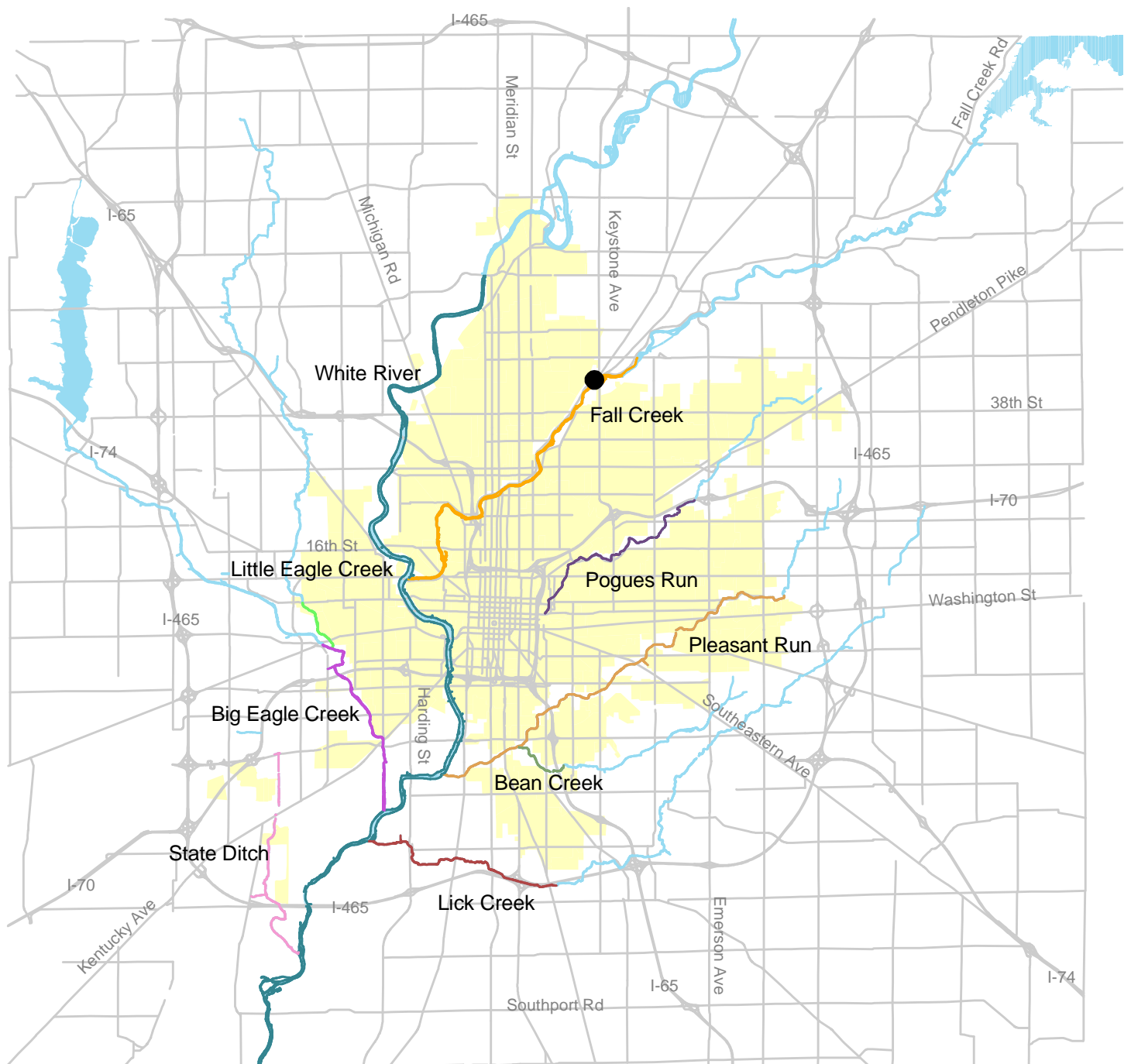
Legend

- Greenway
- Bridge
- Streams
- Major Streets
- CSO Basin

Figure 5

Surface Drinking Water Suppliers

within 10 miles downstream of a CSO



Legend

● Indianapolis Water

CSO Basin

Streams outside CSO area

Streams within CSOarea

BEAN CREEK

BIG EAGLE CREEK

FALL CREEK

LICK CREEK

LITTLE EAGLE CREEK

PLEASANT RUN

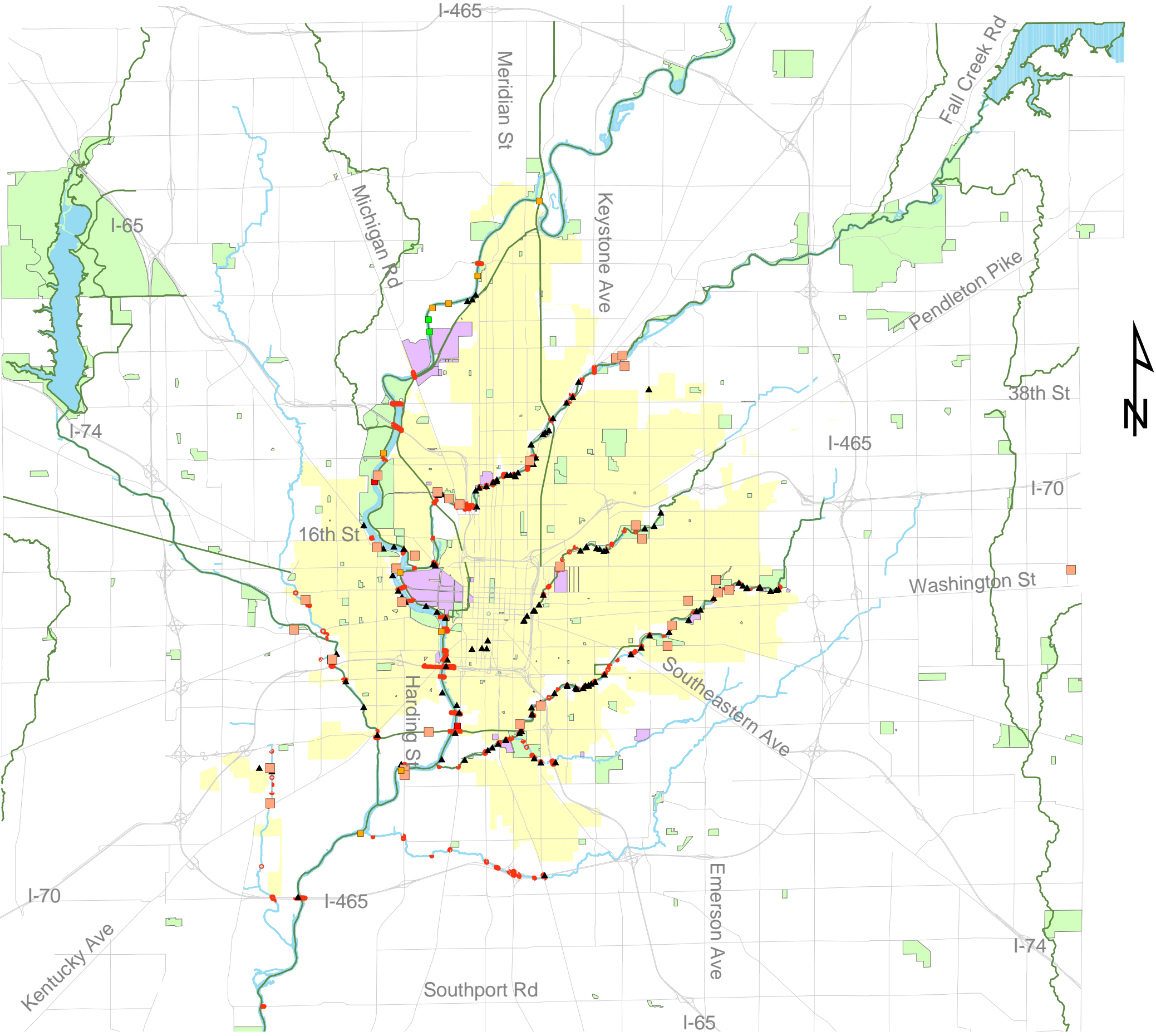
POGUES RUN

STATE DITCH

WHITE RIVER



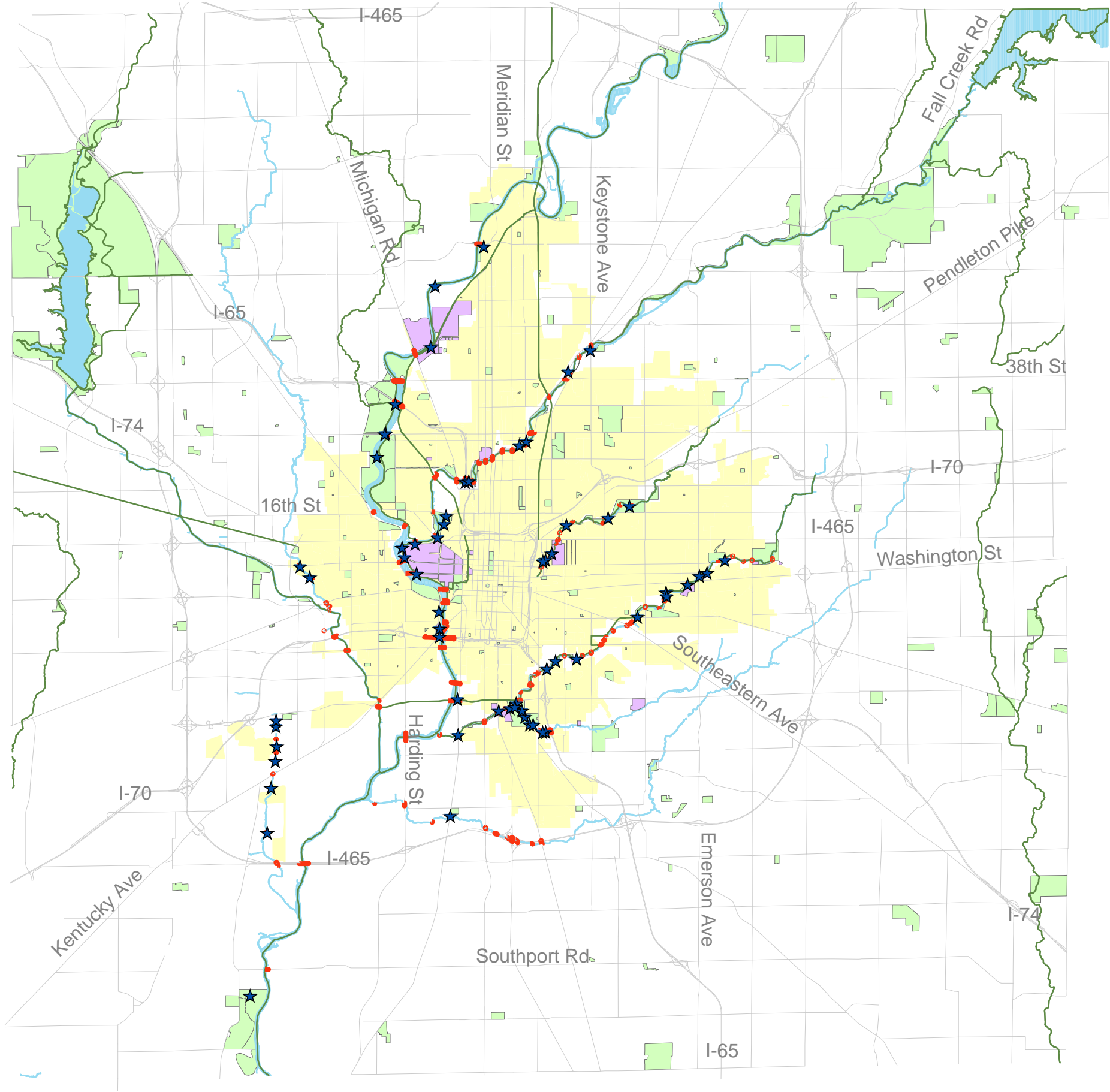
Figure 9
Existing CSO Warning Signs



Legend

- ▲ CSO Outfall and DPW Sign
- MCHD CSO Signs
- Boat Ramp
- Boat Dock
- Canoe Launch
- Greenway
- Bridge
- Major Streets
- Streams
- Parks
- School Area
- CSO Basin

Figure 10
Potential Signs



- Legend**
- ★ Recommended CSO Warning Sign Locations
 - Greenway
 - Bridge
 - Major Streets
 - Streams
 - Parks
 - School Area
 - CSO Basin



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

Office of Water Quality - Mail Code 65-42
100 North Senate Avenue
Indianapolis, Indiana 46204-2251
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

June 27, 2005

Mr. James A. Garrard, Director
Department of Public Works
2460 City County Building
200 East Washington Street
Indianapolis, IN 46204

Dear Mr. Garrard:

Re: Existing Use Determination for CSO-
Impacted Portions of Marion County Streams

The Office of Water Quality has reviewed the above referenced plan submitted on April 5, 2005. The Indianapolis "no existing use" demonstration is based largely upon the rationale that a particular rain event results in a specific response by the CSO receiving stream, rendering the stream unsafe for recreational purposes. The information that Indianapolis provided regarding stream flows, wading and the safety of US Geological Survey (USGS) personnel is accurate as it applies to USGS staff. USGS staff wades into streams at a USGS gaging station location for the purpose of performing certain flow measuring tasks. They have equipment that must be taken into the stream and they have to be able to use it. Under certain flow conditions, USGS personnel are unable to perform their jobs efficiently and safely. The morphology of the stream plays a part in how those velocities are expressed. For example, a segment of the stream with deeper pools would expect to have slower velocities and the shallower cross sections may have faster velocities. Additionally, those stream flow measurements are only applicable to the stream conditions at the USGS gage site from where the measurements were taken, and cannot be extrapolated to the conditions at the sites where the public would access the stream.

The relationship between a storm event and a stream response is dependent on a number of factors. IDEM believes that a safety-velocity based argument is an appropriate one to determine when an existing recreational use is present. Based on the data provided by Indianapolis, IDEM accepts that primary contact recreation is not an existing use during a 3-month storm event for the portions of the CSO receiving streams the City has identified: Fall Creek, Eagle Creek, Pleasant Run, Pogues Run, and the White River. Since primary contact recreation is not an existing use under 3-month storm event flow conditions, Indianapolis may proceed with a use attainability analysis to determine the attainable recreational use for these waters. Because actual velocity at a specific point in a stream system is affected by a variety of site-specific factors, a 3-month rain event is an appropriate threshold because the estimated stream flows resulting from such an event

are high enough to assume that velocities are unsafe even in recreation areas that were not monitored directly. Other flows may be determined to be acceptable based on site-specific data.

It should be also noted that any appeal of this decision must be filed under procedures outlined in IC 13-15-6, IC 4-21.5. The appeal must be initiated by filing with the Office of Environmental Adjudication (OEA) a request for adjudicatory hearing within 18 days of the mailing of this letter at the following address:

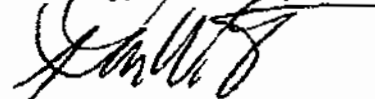
Office of Environmental Adjudication
Indiana Government Center North
100 North Senate Avenue, Room 1049
Indianapolis, IN 46204

Questions concerning appeal procedures should be directed to the Office of Environmental Adjudication, at 317/232-8591.

Please send a copy of any such appeal to:
Cyndi Wagner, Chief
Wet Weather Section
Indiana Department of Environmental Management
100 N. Senate Avenue Mail Code 65-42
Indianapolis, Indiana 46204-2251

If you have any questions regarding this letter, please contact Ms. Wagner at 317/233-0473.

Sincerely,



Thomas W. Easterly
Commissioner

cc: Bruno Pigott, OWQ Assistant Commissioner